

Chemical Week

September 6, 1952

Price 35 cents



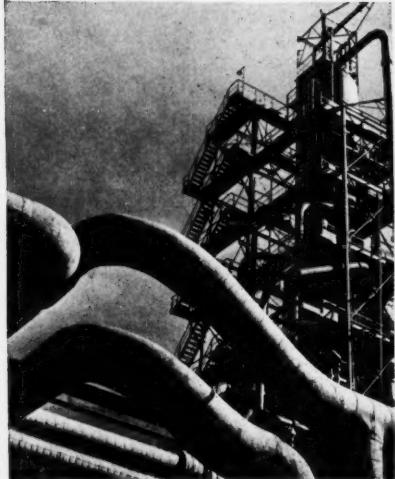
CW Report: Here's a roundup of this year's new chemicals, who makes them, what they'll do . . . p. 19

◀ **MRI's Wessel and Holmes:** They price-tag sulfuric acid from alternate sulfur sources p. 42

Sizing up potential plant sites? Don't overlook the railroads as fact-finders p. 49

◀ **Benzene makers and buyers must consider:** Is there a shortage or simply a price problem? . . . p. 62

OPS gives small drug and specialty makers a break, unfetters new products from controls . . . p. 65



Why long immersion in hot caustic won't harm EPON RESIN finishes



Try this test and see the difference

The Set-Up. One panel is coated with a widely used finish, the other with an Epon® resin finish. Both strips are then suspended in 20% boiling caustic for five minutes.

The Result. When the panels are removed, the conventional finish will be destroyed. The Epon resin coating, resistant to the corrosive attack of caustic solutions, remains unaffected.

The Reason. Epon resins are an entirely new class of condensation polymers . . . with *an ether linkage* instead of the usual ester bond. Thus Epon resins have unparalleled resistance to detergents, caustic solutions, many acids and stain-producing agents. And the inherent inertness of Epon resins is combined with flexibility and toughness never before achieved in a resin-type finish.

Send for samples and our brochure on Epon resins



SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF
INDUSTRY AND AGRICULTURE

EASTERN DIVISION:
500 Fifth Avenue, New York 36

WESTERN DIVISION:
100 Bush Street, San Francisco 6

Los Angeles • Houston • St. Louis • Chicago
Cleveland • Boston • Detroit • Newark • Atlanta

IN CANADA

Shell Oil Company of Canada, Limited
Toronto • Montreal • Vancouver

Chemical Week

Volume 71 Number 10
September 6, 1952

OPINION	2
NEWSLETTER	9
BUSINESS & INDUSTRY	13
CW REPORT	19
PRODUCTION	42
DISTRIBUTION	49
RESEARCH	53
MARKETS	59
SPECIALTIES	65
BOOKLETS	68

PUBLISHER Wallace F. Traendly
EDITORIAL DIRECTOR S. D. Kirkpatrick
EDITOR W. Alec Jordan
MANAGING EDITOR .. Howard C. E. Johnson
ASSOCIATE EDITOR John J. Craig

ASSISTANT EDITORS: Donald P. Burke, George F. Foy, William Olcott, Anthony J. Piombino, Ralph R. Schulz, Homer Starr, E. L. Van Deuseen, J. R. Warren. REGIONAL EDITORS: Frank C. Byrnes, Chicago; Bob Cochran, Cleveland; John Kent, Washington; James A. Lee, Houston; Elliot Schrier, San Francisco. ART EDITOR: Woodfin G. Mizell, Jr. EDITORIAL ASSISTANTS: Caryl Austrian, Peggy Rice. DOMESTIC AND FOREIGN NEWS SERVICE: McGraw-Hill Bureaus in principal cities of the U.S. and throughout the world. CONSULTING EDITORS: Lawrence W. Bass, Benjamin T. Brooks, John V. N. Dorr, Charles R. Downs, Ernest W. Reid, Norman A. Shepard, Roland P. Soule, Robert L. Taylor. BUSINESS STAFF & REGIONAL OFFICES: See page facing back cover.



Chemical Week (including Chemical Specialties, and Chemical Industries) is published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. Publication Office: 1309 Noble St., Philadelphia 23, Pa.

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. General Manager: George T. Gruenwald. General Vice-President and Treasurer: John J. Cooke. Executive Vice-President: Joseph A. Gerardi. Vice-President and Treasurer: John J. Cooke. Secretary: Paul Montgomery. Senior Vice-President, Publications Division: Ralph B. Smith. Vice-President and Editorial Director: Nelson Bond. Vice-President and Director of Advertising: J. E. Blackburn, Jr. Vice-President and Director of Circulation.

Subscriptions to Chemical Week are solicited in the chemical and process industries from management men in administration, research, production and distribution. Position and company connection must be indicated on subscription order. Address all subscription correspondence to Chemical Week Subscription Service, 1309 Noble St., Philadelphia 23, Pa., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Single copies 35¢. Subscription rates—United States and Possessions \$2.00 a year; \$8.00 for two years; \$10.00 for three years. Canada \$6.00 for a year; \$10.00 for two years; \$15.00 for three years. Western Hemisphere \$15.00 a year; \$25.00 for two years; \$30.00 for three years. All other countries \$25.00 a year; \$40.00 for two years; \$50.00 for three years. Back copies \$1.00. Copyright 1952 by McGraw-Hill Publishing Company, Inc. Postage paid at the Post Office at Philadelphia 23, Pa., under the Act of March 3, 1879. Printed in U.S.A. Copyright 1952 by McGraw-Hill Publishing Co., Inc.—All Rights Reserved.



Stabilize your Emulsions with VEEGUM

Small amounts of VEEGUM effectively stabilize emulsions containing anionic and anionic surface active agents. Less than 1% of VEEGUM permanently stabilizes many types of emulsions containing oils, fats, and waxes. VEEGUM also stabilizes emulsions containing significant amounts of electrolytes.

SUSPENDING AND THICKENING: VEEGUM provides complete suspension at lower viscosities than organic gums, or suspends more effectively at equal viscosities. Thixotropic characteristics add to thickening and suspending ability. In addition, VEEGUM maintains product consistency by thickening slightly with heat.

EASILY PREPARED: Effective dispersions of VEEGUM may be prepared by simple agitation with or without heat.

PROPERTIES: VEEGUM is purified Colloidal Magnesium Aluminum Silicate. Non-toxic and non-irritating, it is opaque, white, non-tacky, and non-gelatinous.

Expanded plant facilities are supplying VEEGUM to meet steadily increasing demands of the chemical industry. Write today for the complete VEEGUM story.

R. T. VANDERBILT CO.

specialties  department

230 PARK AVENUE, NEW YORK 17, N. Y.

Please send Veeum Bulletin C110

Please send sample of Veeum

NAME _____

POSITION _____

(Please attach to, or write on, your company letterhead)

Read this!

Turbo-Dryer News:

TURBO-Dryer is an efficient continuous gas-solid heat transfer and reactor apparatus.

Intensive circulation of gas by the turbo fan wheels and repeated piling and spreading of solid material on rotating trays offers unique advantages.

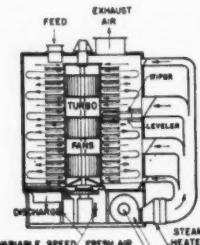
Can be used for exothermic or endothermic reactions. Internal heaters or coolers supply or remove heat, permit maintaining accurate reaction temperatures.

May be operated in a closed circuit for continuous removal of vapors accompanying reaction.

Other reasons for considering the TURBO-Dryer:

**Low Power Consumption
Low Maintenance
Low Pressure Drop**

**Reliable Performance
Sealed Construction
Indoor or Outdoor Installation**



WYSSMONT COMPANY

DRYING ENGINEERS

31-04E Northern Boulevard • Long Island City 1, N. Y.
Representatives in Principal Cities

LAND QUICK!

**HUDSON IS MAKING AN
AMAZING ANNOUNCEMENT
ABOUT MULTIWALLS**



You'll like this down-to-earth offer, too, from Hudson, the manufacturer of multiwall sacks who covers every step from tree to finished sack.

HUDSON PULP & PAPER CORPORATION
Dept. 121 505 Park Avenue, New York 22, N. Y.

OPINION . . .

Petrobenzene Goal

To THE EDITOR: . . . You must have mighty long days in New York . . . because I see in your Market Letter mention of a DPA estimate of 130 million gallons of petroleum-based benzene a day by 1954 . . .

Or is DPA really setting such wide-eyed goals?

R. S. HARTHEN
Tulsa, Okla.

DPA is not that wide-eyed, CW fumbled typographically with a "day" instead of a "year."—ED.

Too Soon for Claims?

To THE EDITOR: . . . I have read your editorial on chlorophyll (Aug. 16) . . . Naturally, we are very much interested in what goes on in this chemical.

. . . Certainly, there seems to be sound evidence that chlorophyll in the right form and in the right dosage has a definite protective action against body odor. This is, however, neither supportive of many of the products on the market nor their many claims.

The opinion of this organization has been expressed in the past . . . that the future of chlorophyll can only be discovered through continuing research over a sufficient period of time to secure conclusive results—and that may be a matter of years.

GEORGE E. BURKE
Vice President
Strong Cobb Co. Inc.
Cleveland, Ohio

Ode to the Goat

To THE EDITOR: . . . That pointed and critical editorial you wrote about chlorophyll and the way chlorophyll-containing products are being promoted . . . did a good deal of injustice to the goat . . .

Although I am no goat-fancier of long standing . . . I do think that you should know that that particular couplet raises the ire of all who are blending what they describe as "nature's magic ingredient" or "the green glamor stuff" into their products . . . to capitalize on the loudly proclaimed deodorant virtues it imparts . . .

The goat eats (among other things) forage that contains chlorophyll . . . which is oil-soluble . . . It is only water-soluble derivatives of chlorophyll—i.e., chlorophyllins . . . that are supposed to be potent . . .

Too, you'll hear that a goat would have to eat tons and tons of grass or alfalfa to equal the amount of chlorophyll present in most pet foods or tablets . . .

This isn't in support of those who

In some things Quality is obvious



*In
Coal-Tar Chemicals
Quality must be proved by performance*

Buy BARRETT and be sure!

When you buy from Barrett, you get *uniform* quality resulting from Barrett's basic position in raw materials *and* nearly 100 years of experience in the manufacture of coal-tar products.



BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

In Canada:
The Barrett Company, Ltd.,
5551 St. Hubert St., Montreal, Que.

*Reg. U. S. Pat. Off.

Barrett* coal-tar chemicals

Phenols
Cresols
Cresylic Acids
Xylenols
Pickling Inhibitors
Benzol
Toluol
Xyol
Naphthalene
Hi-Flash Solvent
Phthalic Anhydride
Dibutyl Phthalate
ELASTEX® DCHP Plasticizer
"ELASTEX" 10-P Plasticizer (DIOP)
"ELASTEX" 50-B® Plasticizer
"ELASTEX" 28-P Plasticizer (DOP)
Phenolic Resins
Niacin (Nicotinic Acid)
Isonicotinic Acid
Pyridines
Picolines
Quinoline
Lutidines
Tar Acid Oils
Neutral Coal-tar Oils
Coal-tar Creosote
CUMAR® Paracoumarone-Indene Resin
Carbonex® Rubber Compounding
Hydrocarbon
Bardol® Rubber Compounding Oil
Flotation Agents

This announcement does not constitute an offering. The offering is made only by the Prospectus, which may be obtained from such of the undersigned as are registered dealers in this State.

NEW ISSUE

August 19, 1952

Texas City Chemicals, Inc.

\$3,000,000

5 1/4% Subordinate Sinking Fund Debentures due January 1, 1963

**300,000 Shares
Common Stock
(no par value)**

**Offered as 30,000 Units each consisting of
\$100 Principal Amount of Debentures
and
10 Shares of Common Stock**

**Price \$107.75 per Unit
(plus accrued interest from July 1, 1952)**

Glore, Forgan & Co.

White, Weld & Co.

Hayden, Stone & Co.

Hemphill, Noyes, Graham, Parsons & Co.

Rauscher, Pierce & Co.

Southwestern Securities Company

Rowles, Winston & Co.

Wagenseiler & Durst, Inc.

O P I N I O N

are indulging in the often senseless exploitation of chlorophyll items . . . it just is a word in favor of the goat . . .

R. S. WENDORF
Long Island City, N.Y.

Thanks, Reader Wendorf. The "goat couplet" was cited, of course, to point up just how the public is sneering and scoffing at some of the razzle-dazzle activities of specialty makers. The distinction between chlorophyll and chlorophyllins is one CW has defined on several occasions—but one that we suspect the public overlooks or disregards.

Even chlorophyllin—magical as it is supposed to be—cannot camouflage the stench from some of the vulgar and ridiculous chlorophyll promotion. Compared with it the much-maligned goat is bland.—ED.

Feud about Fued

TO THE EDITOR: Unions have undoubtedly been highly beneficial to our economy, in most cases. They are now, however, causing some confusion in my mind.

The press is prone to describe their activities in numerous ways but now that they have started "Fueds" (CW, Aug. 23), I don't quite know what to think of them . . .

Please explain, and, if this is a new tactic, I would imagine that management would want to be prepared with a method of countering it . . .

BEN C. SMITH
Lincoln Research, Inc.
Toledo, Ohio.

Established by this inverted spelling: That some 143 CW subscribers are (a) eagle-eyed, (b) sharp spellers (c) have a keen sense of humor. One CW proofreader is now blackboarding: "There's no feud between King Fuad and any Egyptian fuehrer."—ED.

III-TAKEN EXAMPLE

TO THE EDITOR: I have read the letter of Mr. Carl S. Miner and your reply concerning the terms "catalyst" and "chemical catalyst" (Aug. 23).

Catalysis appears to be chemical (as

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

MEMO to: Fibre Drum Users

MANY ARE SWITCHING TO LAMINATED BAGS

Why? Because . . . for many chemical products

- They cost less, but are equally satisfactory
- They pack and handle easier and faster
- They take less warehouse storage space
- They can be attractively printed
- They save freight costs



LET US HELP YOU

SAVE MONEY ON YOUR CONTAINER COSTS!

Write, wire or phone for samples and full information about

Mente SealPak Laminated Bags

Custom-made to meet your particular product needs.

MENTE & CO., INC.

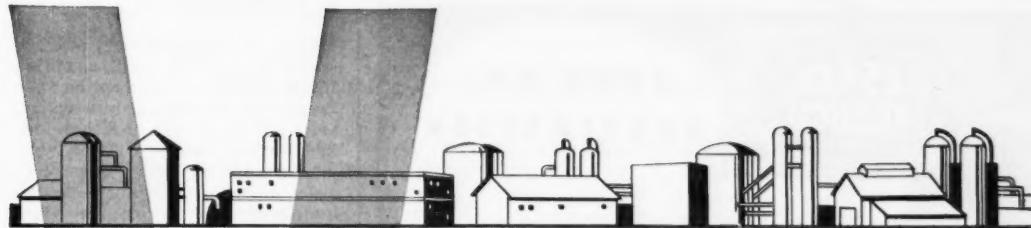
Isaac T. Rhea, Pres.

Dept. CW

**Box 1098
Savannah**

**Box 690
New Orleans**

**Box 204
Houston**



- 1 **EXTEND** limited supplies of resins . . .
- 2 **REDUCE** raw material costs . . .
- 3 **RETAIN** desirable protective properties . . .

use

VELSICOL

RESIN

AD-21

Prominent among the applications of Velsicol AD-21 is its use as an extender for 100% oil soluble phenolic resins. This type of application is capable of providing considerable saving in raw material costs, with resulting retention of desirable performance properties.

Data at the left represents two typical applications in which Velsicol AD-21 can be used as partial replacement of 100% oil soluble phenolic resins.

For additional data and information, request Velsicol Technical Bulletin No. 219.

FORMULATION	25% REPLACEMENT	70% REPLACEMENT
Velsicol AD-31	35 lbs.	70 lbs.
100% Oil Soluble Phenolic	75 lbs.	30 lbs.
Chinawood Oil	280 lbs.	100 lbs.
Soybean Oil 5-70		
Mineral Spirits	380 lbs.	300 lbs.
Driers	0.3% Lead, 0.03% Cobalt, 0.03% Manganese	0.5% Lead, 0.03% Cobalt, 0.03% Manganese
 VEHICLE PROPERTIES:		
Gellos Length	35	25
Solids	50%	30%
Viscosity (Gardner-Holdt)	G+	G
Color (Gardner)	12-13	12-13
Set-To-Touch	15 min.	20 min.
Tack Free	2 Hours	6 Hours
Print Free	3 Hours	8 Hours
Dry Hard	5 Hours	18 Hours
Koari Reduction	Passes 70% Fail 100%	Passes 80% Fail 20%
 GAS PROOF TEST		
WEATHEROMETER TEST	Passes 247 Hours	Passes 228 Hours
 RESISTANCE TESTS:		
H ₂ O (at 77° F.)	72 Hours—Film O.K.	72 Hours—Film O.K.
H ₂ O (at 212° F.)	6 Hours—Film O.K.	5 Hours—Film O.K.

VELSICOL

General Offices & Laboratories
330 E. Grand Avenue
Chicago 11, Illinois

REPRESENTATIVES IN PRINCIPAL CITIES



CORPORATION

Export Division
100 E. 42nd Street
New York, New York

**KESSCO
PRODUCTS**

**CHEMICAL
SPECIALTIES**

PLASTICIZERS

**Cellulose, Vinyls,
Rubber, Resins**

SOFTENERS

**Leather, Rubber,
Textile, Paper**

EMULSIFIERS

**Cosmetics, Foods,
Pharmaceuticals,
Petroleum, Agriculture
Insecticides**

KESSLER CHEMICAL CO., INC.

ESTABLISHED 1921

STATE ROAD and COTTMAN AVE. PHILADELPHIA 35, PA.

**FOR LESS THAN \$500
YOU CAN SOLVE YOUR
SMALL PRODUCTION PROBLEMS
WITH THE MODEL G5S**



Prater Pulverizer, Model G5S
with motor, coupling and base

PRATER

LUMPY CHEMICALS, SOAP, GLUE and many other materials can be reduced to uniform granulation in this Model G5S Prater Pulverizer! Low in price . . . compact and sturdy in structure . . . it does an economical, efficient job on low-volume grinding. Built with the same high standards of quality and workmanship as larger Prater models.

5 to 7½ horsepower. Write for details and prices.

PRATER PULVERIZER COMPANY
1514 So. 55th Court, Chicago 50, Ill.

VISIT OUR BOOTH

135
at CHICAGO CHEMICAL
EXPOSITION, Sept. 9-13

O P I N I O N

opposed to physical) in every case but one in the sense that specific and identifiable chemical intermediates between reactants and catalysts are involved. It is not easy to identify the intermediates involved but as a more detailed knowledge of the various catalytic reactions is gained the evidence for chemical intermediates becomes more and more certain. One is at a loss to explain the selectivity of catalysis on any other basis. The one case of physical catalysis is the ortho-para hydrogen intra-conversion by magnetic substances.

Your choice of platinum black as an example of a physical catalyst was especially ill taken. The vast amount of significant literature on the specificity and trace positioning of platinum and other metals surely indicates catalysis in this case to be chemical in nature.

A. G. OBLAD
Associate Manager
Research and Development
Houdry Process Corp.
Marcus Hook, Pa.

We assure Reader Oblad that hereafter, with our necks securely pulled in, we'll stay off limbs.—ED.

Up-to-Date Antibiotics

TO THE EDITOR: "Antibiotics Up to Date" (Aug. 16) was as clear and terse a summary of this rapidly changing subject as I have seen . . .

JOHN R. HORSEY
National Dairy Research Laboratories
Oakdale, N. Y.

M E E T I N G S . .

Internat'l. Leipzig Fair, Fair Palace, Leipzig, Germany, Sept. 7-17.

Amer. Standards Assn., Museum of Science and Industry, Chicago, Sept. 8-10.

Instrument Soc. of Amer., conference and exhibit, Cleveland, Sept. 8-12.

National Chemical Exposition, Coliseum, Chicago, Sept. 9-13.

Chemical Industries Committee, third session, Geneva, Sept. 9-20.

Natl. Petroleum Assn., annual meeting, Traymore Hotel, Atlantic City, Sept. 10-12.

Tech. Assn. Pulp & Paper Ind., testing conference, Marshall Hall, Syracuse, N.Y., Sept. 10-12.

Packaging Mach. Mfrs. Inst., annual meeting, Homestead Hotel, Hot Springs, Va., Sept. 11-14.

American Chemical Society, 122nd National meeting Atlantic City, N.J., Sept. 14-19.

Electrolytic Aids to INSECTICIDE MANUFACTURE

Chlorine and caustic soda, products of the electrolytic industry, are essential to insecticide manufacture.

Uniformly high quality **GLC Graphite Anodes** are equally important to the chlorine and caustic soda production of many leading electrochemical manufacturers. The performance of **GLC Graphite Anodes** in electrolytic cell operations is unsurpassed.

ELECTRODE DIVISION

Great Lakes Carbon Corporation

Niagara Falls, N. Y.



Morganton, N. C.



Courtesy Piper Aircraft Corporation

Graphite Anodes, Electrodes and Specialties

Sales office: Niagara Falls, N. Y. • **Other offices:** New York, N. Y., Chicago, Ill., Pittsburgh, Pa.

Sales Agents: J. B. Hayes Company, Birmingham, Ala., George O'Hara, Wilmington, Cal.



... VIA THE WORLD'S LARGEST
CHROMIUM CHEMICAL PLANT

Here at Mutual's Baltimore Plant chrome ore is processed into chromium chemicals of the highest purity for use in practically every phase of American industry. Chromates, Bichromates and Chromic Acid are used in leather tanning, in the production of yellow, orange and green pigments, and in chromium plating. Chromium chemicals inhibit corrosion in water and brine cooling systems and in pipelines. They are also used for wood preserving, textile finishing and for numerous and varied purposes in the chemical industry. Chromate-containing primers and chemical conversion films form thin, tough protective coatings on metal surfaces. Other applications extend into almost every field of modern industry.

Mutual's integrated operations, from ore to chromium chemicals, assure the many industries it serves of a dependable supply of these basic materials.



MUTUAL CHEMICAL COMPANY OF AMERICA
270 MADISON AVENUE • NEW YORK 16, N. Y.
PLANTS: BALTIMORE — JERSEY CITY

Mutual Chromium Chemicals

SODIUM BICHROMATE • SODIUM CHROMATE • POTASSIUM BICHROMATE • CHROMIC ACID

NEWSLETTER

Controls are still a tenet of Washington policy, but steel-strike politicking, the defense stretchout, and failure of many expected shortages to materialize have all combined to dispirit the controllers.

Most significant shift this week was the exit of Price Stabilizer Ellis Arnall, who was disaffected by the steel settlement, and the entrance of Tighe Woods, who had been administering rent control.

Of more direct interest to the chemical process industries was the resignation of Frank Bennett, chief of the Drugs, Solvents and Detergents Branch of NPA's Chemical Division. An old Washington hand (WPB, head of CPA's Chemical Division) he will return to Publicker Industries, Inc.

One controlling agency still very much alive despite a murder attempt by Congress is the International Materials Conference, a 28-nation group which allocates sulfur and other commodities.

Congress passed a rider forbidding the State Department to use any of its funds to support the program. The slick way out: simply transfer responsibility to DPA, which has the money.

But DPA's take-over won't stay unchallenged. Many congressmen, refuting IMC's claims not only of legal authority but also of serving the nation's best interests, will move to defeat State's clever gambit.

Almost a decade after application was made, a patent on napalm has been issued to the Army Chemical Corps. It was actually issued to Harvard Professor Louis Fieser, who assigned it to the Corps.

Royalty-free licenses will be granted to any reputable firm, say Chemical Corps lawyers.

Broad in scope, the patent (No. 2,606,107) covers the thickening composition as well as the gelled gasoline fuel. The thickening agent is composed basically of aluminum fatty acid soaps, aluminum naphthenate and unsaturated fatty acids.

Reason for the long delay in granting the patent: national security considerations.

Another military-inspired product, polychlorotrifluoroethylene, grew another cubit this week as Carbide and Carbon decided to spend \$1,315,000 on capacity expansion at Charleston, W. Va.

Sale of the material—volume of which even after the boost will still be practically pilot-plant—will be handled by Bakelite.

Union Carbide also said that it will not run the AEC gaseous diffusion plant to be built near Portsmouth, Ohio. Reason: AEC wants wider industrial participation, doesn't think it wise to have only one company capable of operating the diffusion process.

But Carbide will advise AEC on process design and equipment, will help the still-to-be-chosen contractor get started.

Over thirty companies are chipping in to set up Fractionation Research, Inc., a non-profit organization to compile and develop engineering information on fractionation problems. Chemical, petroleum, natural gas and construction engineering firms are on the roster.

NEWSLETTER

You can expect further details later this year on Dow Chemical's new ion-exclusion process, a switch on ion exchange to separate ionic from nonionic materials in solution.

The process uses the salt form of strongly acidic or basic ion-exchange resins. When an ionic-nonionic mixture is passed through, the ionic portion comes out first. Small particle-size resins (50-100 mesh) appear to work best. Dowex 1, 2 and 50 are currently employed.

Dow is now operating a 70 gal./hr. unit. When patents are issued the process will be licensed.

Applications foreseen: Removal of ionic impurities from aldehydes, glycols, alcohols and the like.

Another resin development—this time by the National Bureau of Standards—will find its greatest utility in the electronics industry.

It's a new fast-curing "potting" resin for fabricating electronic assemblies. Called "AN-5," the new resin is a modified styrene containing acrylonitrile monomer, divinylbenzene, hydrogenated terphenyl, polystyrene and cobalt drier. Benzoyl peroxide and a promoter, "Pro-A," are added to the liquid before use.

The Department of Interior research project on desalting seawater (CW, Newsletter, July 12, July 19) is now getting under way.

Heading the program is Goodrich Lineweaver, who is now lining up an advisory group of academic and industrial scientists.

A new process to recover germanium from gas works' flue dusts has freed Britain from dependence on the U. S. for this element, widely used in the manufacture of transistor tubes.

Germanium is found (about 0.1%) in most British coals.

Swiss processes for manufacture of crystalline urea, methanol, formaldehyde and ammonia have been acquired from Inventia, the Swiss concern, by Vulcan Engineering Division (Cincinnati). Vulcan has exclusive rights to build plants in the U. S. and Canada.

Tougher competition for world markets from European chemical producers is in store if the Administration follows the recommendations of Ambassador William Draper, who just reported to President Truman. Says he, "More production . . . and better markets are essential to Europe's further economic development; . . . European markets no longer . . . serve."

Foretaste of what's ahead: A World Bank loan and an MSA grant will permit Iceland to build a 7 million ammonium nitrate fertilizer plant —big enough for Iceland's total needs, now imported.

But not all government money is going abroad. RFC has just loaned Southwest Fertilizer and Chemical Co. (El Paso) \$312,083 for a plant to make 20% phosphate from ground phosphate rock and spent acid from a near-by refinery. The firm now makes and sells fertilizers and insecticides.

"Every employee a stockholder" is an ideal that has been achieved at the Phillips (Texas) Refinery of Phillips Petroleum Co. This status was achieved last month when five rival groups within the Frank Phillips Men's Club contested to sign up every one of the 1,063 employees. They all reached the 100% goal within a few days of each other.

... The Editors

ERIEZ MAGNETIC ATTRACTIONS

ERIEZ MANUFACTURING CO., ERIE, PA., U.S.A. • PRODUCERS OF MAGNETIC SEPARATORS

NO MORE PUMP TROUBLES...

HOW YA FEELIN?

FINE!!
THANKS
TO YOU.

GET THIS
BULLETIN
AND BURY
YOUR T.I.
TROUBLES!

FREE
CATALOG
#15



MAGNETIC PROTECTION FOR YOUR CHEMICAL PROCESSING LINES!

A new, big sixteen-page catalog gives complete engineering specifications, drawings, illustrations and descriptions of 25 different types of ERIEZ Magnetic Separators for use in the chemical industry. Get your copy today... It's FREE! Use the coupon at right.

...at the Mentholatum Co., Buffalo, N.Y., since an ERIEZ Magnetic Trap — faced with stainless steel for sanitary protection — was installed to prevent tramp iron damage to five pumps feeding the company's hot, free-flowing cold-preventive products. Here's another satisfied customer who says "The ERIEZ Magnetic Trap has so reduced maintenance and repair costs, as well as down-time, that operation without it would now be unthinkable!"

WORKING 'ROUND THE CLOCK
taking ferrous particles from scrap rubber seven days a week without any reduction in operating efficiency... that's the record of 12 ERIEZ ATOMagnet Pulleys at a leading chemical plant!

These non-electric magnetic separators are made of Alnico V, the most powerful and efficient magnetic metal in commercial use. They're guaranteed to retain their full magnetic power for the life of the chemical equipment on which they are installed!

CLIP
COUPON
FOR FREE
BULLETIN!



ERIEZ Manufacturing Company, 217 State Street, Erie, Pa.

My Contamination or Separation Problem is: _____

Please Send Me the FREE Catalog #15

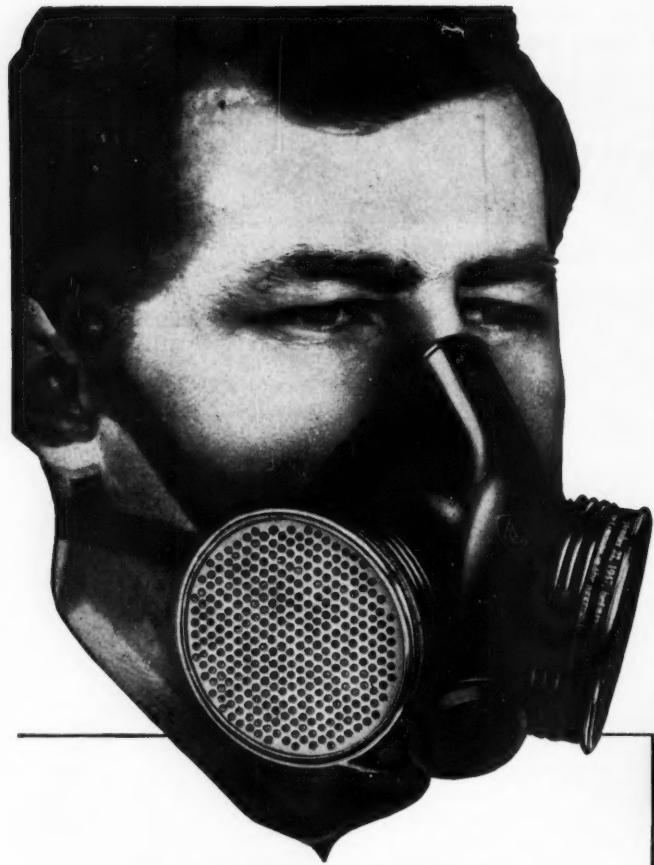
Name _____ Title _____

Company Name _____

Street _____

City _____ Zone _____ State _____

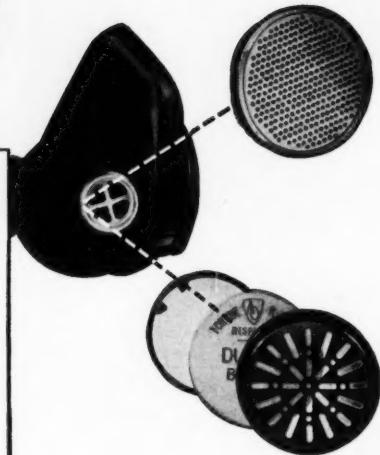
52-1



NEW
AO
RESPIRATOR
LINE

Pay for ONE Facepiece,
GET 7 TYPES OF PROTECTION
with the AO R5000!

Yes, due to quick interchangeability of its threaded cartridges and disc type filter, the AO R5000 line of TWIN CARTRIDGE RESPIRATORS permits you to standardize on one respirator in protecting your workers against the multitude of dust, vapor and gas hazards commonly met with in industry. Remember, there's only one facepiece to stock and the R5000 offers greater visual area and many advanced construction features that mean added safety and comfort. Ask your nearest AO Safety Products Representative for the R5000. Tell him the respiratory hazards encountered in your operations and he will recommend the disc type filter and/or cartridges required.



**QUICK,
EASY INTERCHANGING!**

Retainer assembly accommodates both chemical cartridges and AO disc type filter — the small chemically treated filter that gives 40 times the dust protection of untreated filters. The cartridges screw in — assures a positive gas-tight seal. The felt filters stay put safely by a cover that screws onto retainer assembly.

American Optical
COMPANY
SAFETY PRODUCTS DIVISION

Dust Filter and Organic Vapor Cartridges,
Combinations of both, and Metal Fume
Cartridges Approved by the U. S.
Bureau of Mines

Southbridge, Massachusetts • Branches in Principal Cities

BUSINESS & INDUSTRY . . .

Allied Goes Outside

Even Allied Chemical & Dye Corp., long boasting one of the strongest financial positions in the chemical industry, is finding that 1952's cost of living and cost of expanding puts a strain on the cash box. For the first time in the company's history it has gone outside to borrow money: A group of New York banks has loaned it \$50 million.

The loans are on 3% unsecured notes for three years; the company has the right of pre-payment at any time without premium.

Purpose in securing the money is to provide working capital and funds for construction of new plants as well as replacement and expansion of present facilities. Allied, in the throes of a tremendous postwar construction program, has ticketed \$75 million for capital expenditures this year, a like amount in 1953 if construction materials are available. This is on top of approximately \$226 million (of its own funds) it has spent for construction from the end of 1945 to the end of 1951.

Earlier this year the company sold some 200,000 shares of U.S. Steel common stock, its entire holdings of American Natural Gas common (94,200 shares) and some miscellaneous securities. The company probably improved its cash position by some \$10 million, of which perhaps \$1.5 million represented net profit on the investments.

Though the year's activities have undoubtedly taken a bite out of the \$127-odd million working capital the company had on hand December 31, no one need regard Allied as impoverished. As one company official told CW: "We're not broke by a long shot. It's just that when you get used to having over \$100 million you don't feel at ease jangling a few dollars."

Aluminum—If

The Aluminum Co. of America last week outlined its plans for primary aluminum production facilities near Skagway, Alaska. But the proposal still has a long way to go before it reaches reality.

Alcoa plans a \$400 million expenditure to construct power generating facilities and refining capacity to pro-

duce 400 million pounds of aluminum per year. Ultimately, it could double this capacity.

The company would raise the money privately, asking the government only for a 50% rapid tax write-off on actual smelting facilities and for a fair break on any stockpile buying.

The "Ifs": Alcoa can't go ahead without the permission of the Canadian Government and that of British Columbia, since the water for the power generation would have to be tunneled through from Canada.

The U.S. Government, too, must approve the project. It must decide whether the proposal can be fitted into its aluminum expansion goals, (CW, June 14). It must also authorize sale of land to Alcoa.

Canadian approval is the greatest hurdle, even though Alcoa has received some encouragement from authorities at Ottawa and Victoria, B.C. There could be a good deal of sentiment against the project since it would mean more competition for Aluminum Co. of Canada's Kitimat, B.C., plant, now under construction.

Alcan's first unit will be onstream in 1954. Alcoa's couldn't be ready before 1957. Ultimate plant capacities: Alcan, 1.1 billion pounds per year; Alcoa, 0.8 billion.

Boost for Green

The U.S. Customs Bureau has ruled that, effective Sept. 22, the ad valorem duty on chlorophyll and chlorophyll derivatives will be 12½%, rather than 7½%.

By boosting the rate, it shows that it considers these materials in the chemicals-medicinal class, rather than vegetable extracts used primarily for dyeing or coloring.

Shift to Pugnacity

Impatient for faster growth and for more aggressive bargaining, delegates to the sixth constitutional convention of the United Gas, Coke & Chemical Workers (CIO) have demanded a drive for industry-wide contracts and installed a younger and more vigorous president.

In the bellicose atmosphere of the four-day convention in Chicago, crisp, 40-year-old Elwood D. Swisher of Dunbar, W.Va., unseated genial Mar-

tin Wagner by a vote of 414.6 to 410.4 for the top office. Wagner had headed this union ever since it broke away from the United Mine Workers and affiliated with CIO 10 years ago.

Retained in office are Joseph R. Joy, who starts his third two-year term as vice-president after a 439 to 383 victory over Stephen G. McMullen; and Cecil Martin, who defeated Sam Angelocci for the secretary-treasurer post by 504-295.

Union Rivalry: In a 42-page report that turned out to be his presidential swan song, Wagner made these points:



SWISHER: Firm believer in organizing.

- The chemical industry, and employment therein, are expanding rapidly.

- "Great segments" of the present force of chemical workers still are not unionized.

- Just as a manufacturing plant must strive to "stand the acid test of competition," so Gas-Coke must keep pace with the vast technological, economic and social changes coming in this growing industry.

- Accordingly, Gas-Coke must go to the unorganized workers "and organize them fast."

Anti-Red Crusader: Swisher, the new president, previously served as chief of the West Virginia district, where membership swelled by more than 80% during the past two years. Several years earlier, as an international representative serving in several

districts, he was a leader in the move to purge Communists from the union.

Swisher also has been working as coordinator of the Carbide and Carbon council, made up of Gas-Coke locals whose members are employed by Union Carbide and Carbon.

Strike Fund Planned: During the next 90 days, all members of Gas-Coke are to vote on the question of adding 25¢ to the present \$1 monthly per capita levy, with most of the increase to go into a "strike fund."

Union officers have been directed to set up councils to battle for industry-wide bargaining. The union's goal is to have a paint council to negotiate a master contract with all paint companies, a drug council to bargain for all drug manufacturing employees, and so forth.

The delegates also called for more effort to get straight union-shop contracts, voted to grant honorary memberships to former members on retirement, and agreed to support the CIO Political Action Committee's line in the November election.

Avant-Garde Pageant

There'll be a futuristic aura about the seventh biennial National Chemical Exposition at Chicago's spacious Coliseum, Sept. 9 to 13.

Exemplifying the chemical industry's forward-march in methods and materials during the past two years, the exposition will include seven displays of atomic energy equipment, one exhibit of natural and pile-produced isotopes, one display on radiography of metals, and four films about atoms and radioisotopes.

Nucleonic Speeches: In addition there'll be an all-day session (Sept. 11) on industrial applications of atomic energy, with such speech topics as: Tracer Experimentation, Utilization of Fission Products, Radiation to Promote Chemical Reactions, and Business Management in the Atomic Age.

Some 200 exhibitors are booked for the show, including five from abroad—Eldorado Mining & Refining, Ottawa, Canada; Federation of Belgian Chemical Industry, Brussels, Belgium; Schumacher'sche Fabrik, Bietigheim, Germany; Watford Chemical, London, England; and Watford (Canada), Toronto.

Alphabetically, the classifications of exhibitions run from "Abrasives" to "Wire Cloth," and will occupy nearly all of the Coliseum's floor space. Chairman of the exposition committee is H. W. Schultz of Swift & Co. Sponsor is the Chicago ACS section.



EXECUTIVE TRAINEES, COUNSELORS*: There's no test like doing.

Eliminating Guesswork

This month four young men at Hooker Electrochemical Co.'s Niagara Falls, N.Y. plant are getting a chance many a junior chemist or engineer dreams about: Take over the boss's job. These promotions, however, are only temporary, for the men are the first trainees selected in the company's new management development program designed to build executives and eliminate the guessing factor in promotions. For a long time the company has used appraisal forms to rate employees' job performance. Two or three of an individual's superiors, who do not know the weighted value given to different points by which a man is rated, fill out the forms independently, and generally they agree in their estimate of his performance.

But in picking a man in advance for the next higher job, there has often been a wide difference of opinion. And though Hooker has had a supervisory and management training program conducted by the conference method, there was no assurance that a fellow doing a bang-up job in one spot would not be a washout when moved up a notch.

The new plan, the idea of industrial relations director Frank Dennis, will supplement the old program. It is designed to eliminate the possibility of making bad decisions in granting promotions, to make men better in their current positions as well as grooming them for the day when an

opening for a more important job develops.

Two New Posts: First step in the program was creating two new jobs known as area supervisors where the trainees would have the chance to assume the same types of responsibility generally within the superintendent's province. Each is responsible for half the company's operating departments, and works closely with department heads, foremen, and rank and file employees as well as top management.

When these two men are moved from their existing jobs to their new training spots, they leave vacancies in their "home" departments. This provides additional chances for trained men from a lower level of management to be moved to a more responsible job. In this way, men at all levels of management, and in many cases men in the ranks, will move up a step temporarily. Hooker figures that the weight of this responsibility will give them a greater appreciation of the problems facing their former supervisors, and they'll do their regular job better.

Tentatively the first four selected will serve in their new jobs about six months. Temporary area supervisors have been made out of a safety engineer (Joseph Tardiff, with Hooker since 1937) and a department head (John Sweeney, who also joined the company in 1937). A maintenance engineer (George Duckwall, with Hooker since 1940) has become a department head, and a personnel man (Alton Thorpe, also hired in 1940) personnel supervisor.

* First to take part in Hooker's management development program, left to right: Joseph A. Tardiff, Alton V. Thorpe, Frank W. Dennis, F. L. Bryant, George E. Duckwall and John D. Sweeney. Dennis is director of industrial relations; Bryant, Niagara Falls plant supt.; the others are management trainees.

In weekly meetings with the plant superintendent, F. L. Bryant, and Dennis, the men will be advised of their progress in their new jobs. The older men will also review their work and give them constructive criticism.

As the program develops, the company will be building up a reservoir of trained talent. When a vacancy occurs, it will be unnecessary to train or test a man for a higher job.

Morale Problems: Although there appear to be decided advantages to this relatively simple method of providing for tomorrow's executive, there are some dangers in the plan too: What of the man who doesn't measure up to the job during his trial? Will there be a feeling that some men who have demonstrated capacity to handle a bigger job are "crown princes"? Will those picked expect that advancement is in the offing, and feel cheated if they don't get it in a reasonable time?

Hooker doesn't anticipate any such trouble. A fellow who doesn't measure up in one spot does not necessarily eliminate himself from consideration for training in another advanced position for which his talents may fit him. It is to his and the company's advantage, however, to learn ahead of time what jobs he cannot handle.

And the fellow who simply lacks the ability to advance to more responsible positions at least knows that the company has given him every chance it could. He cannot in fairness criticize management for not advancing him, nor for picking someone else for a coveted spot. The company thinks its system will prevent, not foster, bitterness of this kind.

Several men in a department may train for any given job, and all demonstrate the ability to assume its responsibilities. Hooker does not anticipate any bad feeling toward those who have had such training, nor any resentment if promotions are not made. For no man is told that there are any vacancies ahead, and there are no commitments made that he is in line for a better job within the near future.

The plan has the enthusiastic endorsement not only of the president, R. L. Murray, but of the union too. For it gives plant workers as well as salaried men an opportunity to advance, and as union president Jay Martinez says, "We are vitally interested in having an effective, efficient and human supervisory and management staff. The better the supervision, the less likelihood of grievances and problems, the greater assurance of happiness on the job."



Last or Latest?

TIGHE E. WOODS, who this week succeeded Ellis Arnall as director of the Office of Price Stabilization, should find supply-demand conditions in the chemical industry, at least, much less critical than they were six months ago when Arnall took over from Mike DiSalle. Arnall supposedly quit because Congress weakened OPS's power and cut administration funds. Industry generally feels Congress should have gone further in scuttling controls, hopes Woods is the last controller—and that his tour of duty is short.

No Clandestine Split

There'll be no bisection of Canadian Industries, Ltd., without first consulting with CIL directors, the two big owners of that firm have promised. Du Pont and Imperial Chemical Industries, which have been ordered by a U.S. District Court to dissociate themselves for strict compliance with anti-trust laws, have assured CIL that it will have a chance to speak its piece before the two parent companies adopt any plan to cut CIL in two.

Each of the two parent companies owns 42% of CIL's common stock. Federal Judge Sylvester Ryan has ruled that if Du Pont and ICI don't want to sell their shares in CIL, they can divide the Canadian concern into two new companies, with a corresponding division of physical properties.

May Enter Case: CIL's top officers, Chairman George W. Huggett and President H. Greville Smith, say that their company may ask to be heard when the parent companies present their divestiture plan to the court.

Once before, CIL sought to enter this case during the hearing of testimony in New York, but Ryan ruled then that CIL stay on the sidelines.

News of the Du Pont-ICI promise came in a joint letter from Huggett and Smith to all other shareholders. It said CIL "has received the assurance of ICI and Du Pont that, if they should decide to submit a plan involving segregation of the plants and properties of the company, they will first consult with the CIL board of directors as to the effect of such plan on the interests of the preferred and minority common shareholders."

LEGAL

Battle in Boston: Chemical companies are watching the "delayed tack" lawsuit between S. D. Warren Co. of Boston and Nashua Gummmed and Coated Paper Co. of Nashua, N.H., to see if the district court's decision in favor of Nashua will stick. Warren is appealing the case, and indications this week are that the case will be called on the circuit court's crowded calendar in December. Two months ago, district court ruled that Warren infringed a Nashua patent for an adhesive coating that remains sticky for minutes or even days after heating, as desired. Warren claims the patent is invalid, and that in any case there was no infringement because "the Warren company is working in a field which Nashua all along has said would not produce the desired results."

Oil Firms in Hot Water: The coming of cooler weather seems to be the signal for the Truman Administration to try to put the heat on the big oil companies. Attorney General McGranery has filed three civil suits to try to recover more than \$67 million from Socony-Vacuum, Standard of New Jersey, Standard of California, The Texas Company and some of their subsidiaries. The allegation is that those companies overcharged the Mutual Security Agency by that amount for oil sent abroad.

In another stage of running the gauntlet, the oil companies got a slap when President Truman authorized the Senate's Small Business Committee to make public a 900-page FTC report accusing certain oil firms of engaging in a world-wide cartel that tended to gouge American consumers and taxpayers. This report has been subpoenaed by a Federal Grand Jury in Washington that is investigating oil monopoly charges. Companies ordered to send representatives to the Grand Jury this week are the four concerns

BUSINESS & INDUSTRY . . .

named in the over-charge suit, plus Gulf and two British owned companies, Anglo-Iranian and Royal Dutch Shell.

Chemical Confab

Leaving for Europe this week are labor, industry and governmental delegates to the third biennial conference of the chemical industries committee of the International Labor Organization, meeting next week in Geneva, Switzerland.

Although President Truman has not announced the names of the U.S. delegates, it was expected that the chief delegate from this country will be Charles C. Concannon, general handy-man in chemicals for the Commerce Department and the NPA.

Chemical companies and unions have shown increasing interest in the work of this committee, possibly because it affords an opportunity to compare notes with representatives of the world's 18 principal chemical manufacturing countries outside the iron curtain.

On the agenda for this meeting is an ILO report stating that there is a growing shortage of chemical manpower on all levels, due both to long-range and temporary (defense) expansion. Among the countries listed as short-handed in chemical workers are the U.S., Britain, France, Belgium and South Africa. Also to be discussed: vocational training and the problem of day work vs. shift work in the chemical industry.

KEY CHANGES . . .

Robert K. Mueller: To general manager, Monsanto Chemical Co.'s Plastics Division, St. Louis, Mo.

Ernest Hart: To executive vice-president, Food Machinery and Chemical Corp.'s Chemicals Division, New York, N.Y.

F. Drake Parker: To manager, Western Headquarters, Chemical Plants Division, Blaw-Knox Co., Tulsa, Okla.

William S. Vaughn: To first vice-president, Tennessee Eastman Co. and Texas Eastman Co., Kingsport, Tenn.

EXPANSION . . .

Sulfur: Phillips Chemical has begun operation of a Crane County, Tex., plant to extract elemental sulfur from natural gas. The plant—Phillips' second—is producing about 55 tons/day. The material will, in the future, be used to make sulfuric acid for Phillips' ammonium sulfate facilities near Houston.

Cold Rubber: The government syn-

ESSENTIAL METAL ALLOTMENTS FOR NEW CHEMICAL CONSTRUCTION

Company, Location	Product	Amount
Seabord Oil, Park County, Wyo.	Sulfur	\$ 991,000
Swift & Co., Norfolk, Va.	Sulfuric acid	18,800
Allied Chemical & Dye, E. St. Louis, Ill.	Sulfuric acid	1,663,000
Armour & Co., West Nashville, Tenn.	Sulfuric acid	235,600
Diamond Alkali, Houston, Tex.	Chlorine	8,750,000
Algonquin Chemical, Huntsville, Ala.	Chlorine, caustic	12,700
Davison Chemical, Ridgewood, Fla.	Phosphoric acid, uranium, phosphates	12,410,000
Virginia-Carolina, Nichols, Fla.		
Victor Chemical, Chicago Heights, Ill.	Phosphoric acid, phosphates	4,500,000
Linde Air Products, Tonawanda, N.Y.	Dicalcium phosphate	80,000
Koppers Co., Port Arthur, Tex.	Oxygen, nitrogen, argon	325,000
Union Carbide & Carbon, Institute, W. Va.	Ethylene oxide	8,768,550
Allied Chemical & Dye, Buffalo, N.Y.	Ethylene oxide	1,460,500
National Refining, Toledo, Ohio	Maleic anhydride	4,688,000
Columbus Southern, New Martinsville, W. Va.	Ethyl alcohol, chloride	9,100,000
Koppers Co., Kubota, Pa.	Benzene	2,225,000
Union Carbide & Carbon, Marietta, Ohio	Benzene	240,535
Rohm & Haas, Houston, Tex.	Phenol	4,950,000
Velsicol Corp., Memphis, Tenn.	Phenol, acetone	3,760,000
Union Carbide & Carbon, Bound Brook, N.J.	Phenol	750,000
Montrose Chem. Co., Calif., Henderson, Nev.	Sterene	119,600
Penna. Carbon Co., Ky.	Monochlorobenzene	35,200
Union Carbide & Carbon, Bound Brook, N.J.	Lindane	90,401
Union Carbide & Carbon, So. Charleston, W. Va.	Phenolic resins	203,700
General Tire & Rubber, Colvert City, Ky.	Vinyl resins	187,000
Union Carbide & Carbon, So. Charleston, W. Va.	Vinyl chloride, resins	6,000,000
Stauffer Chemical, Co., Tooler County, Utah		
Hercules Powder, Hattiesburg, Miss.	Polyethylene	1,405,700
Du Pont, Waynesboro, Va.	Fluorothene	1,315,000
Allied Chemical & Dye, Buffalo, N.Y.	Dresinate	48,570
Schering Distillers, Lawrenceburg, Ind.	Cellulose acetate flake	7,250
Sharp & Dohme, West Point, Pa.	Dyes	1,117,119
Calhio Chemical, Perry, Ohio	Antibiotics	179,525
Allied Chemical & Dye, Solvay, N.Y.	Pharmaceuticals	200,000
American Cyanamid, Bound Brook, N.J.	Fungicides	750,000
Collyer Chemical, Calley, Pa.	Chemicals	207,000
Celanese, Bishop, Tex.	Chemicals	184,300
Dow Chemical, New York Harbor	Chemicals	165,000
Grinnell Corp., Newark, N.J.	Chemicals	1,450,000
B. F. Goodrich Chemical, Avon Lake, Ohio	Chemicals	48,000
Mathieson Chemical, Niagara Falls, N.Y.	Chemicals	269,991
Mathieson Chemical, Morgantown, W. Va.	Chemicals	500,000
Monsanto Chemical, Springfield, Mass.	Chemicals	200,000
John Puhl Products, Salem, Va.	Chemicals	209,600
Rayette, Inc., St. Paul, Minn.	Chemicals	200,000
Stauffer Chemical, Co., Tooler County, Utah	Chemicals	29,662
	Chemicals	3,087,000

thetic rubber plant at Louisville, Ky., operated by the Kentucky Synthetic Rubber Corp., has been converted to production of cold rubber. Conversion cost \$1.3 million.

The company is making plans to buy the plant when the government turns over its synthetic plants to private industry. In doing so, it perhaps has greater problems than those of many other plant managements since it is owned by 11 companies which do not themselves make tire rubber.

Softeners: Glyco Products has begun production of monoglycerides at its new Williamsport, Pa., plant. It is gradually shifting its civilian production to Williamsport from Natrium, Pa. After Nov. 1, only defense-supporting materials will be made at Natrium.

Synthetic Fiber: American Viscose and Monsanto Chemical's Chemstrand subsidiary last week previewed goods

made of its Acrilan acrylic fiber. They will go on sale throughout the country Sept. 8.

On the technical end, Acrilan is now identified as "chiefly acrylonitrile," rather than as a 85% acrylonitrile, 15% vinyl acetate polymer.

Productionwise, the company is bringing into production its 30 million pound/year plant at Decatur, Ala. Continued full production will not be possible until parent Monsanto's acrylonitrile plant at Texas City goes on-stream. Present completion date: early 1953.

COMPANIES . . .

Mathieson and Squibb: stockholders will vote on Sept. 30 on the plan approved by directors of the two companies to merge the concerns. If the stockholders endorse it, the merger will become effective on Dec. 1. Squibb will then become an operating division of Mathieson.

CURRENT LIST OF DPA-CERTIFIED FACILITIES

Company, Location	Product	Amount Certified	% Certified
Sullivan Mining, Shoshone County, Idaho	Sulfuric acid	\$ 4,352,370	70
Edge-Picher, Galena, Kans.	Sulfuric acid	3,565,529	70
Dolomite Reduction Corp., Ada, Okla.	Chlorine	7,045,960	45
U. S. Steel, Gary, Ind.		5,499,000	30
Allied Chem. & Dye, Philadelphia, Pa.	Metallurgical coke	14,192,000	45
Monsanto Chemical, Everett, Mass.	Phthalate esters	818,400	45
Monsanto Chemical, St. Louis, Mo.	Phthalate esters	2,207,800	45
Commercial Solvents, Terre Haute, Ind.	Tricresyl phosphate	780,000	45
Wyeth Pharmaceuticals, West Chester, Pa.	Tributyl phosphate	232,900	45
Merck & Co., Danville, Pa.	Antibiotics	3,270,232	60
	Niacin	1,566,707	30
		714,730	40



Another Leading Oil Company
now using

RHEEMCOTE POSTER DRUMS

**From one quart to 55 gallons —
Sinclair gets distinctive design
on all containers**

Sinclair, too, realizes the sales value of colorful, attention-demanding containers. Like many others, they are now shipping petroleum products in 55-gallon Rheemcote Poster Drums like the one shown here.

Rheemcote containers can be lithographed in any number of colors, any design, including halftones. The high-gloss finish is tough, long-lasting. When necessary, interiors can be roller-coated with special protective lacquers.

If your product is shipped in steel containers, let Rheem show you the way to added prestige and profit . . . with Rheemcote Poster Drums.

**RHEEM
MANUFACTURING
COMPANY**

General Sales Offices
570 Lexington Ave.
New York 22, N.Y.

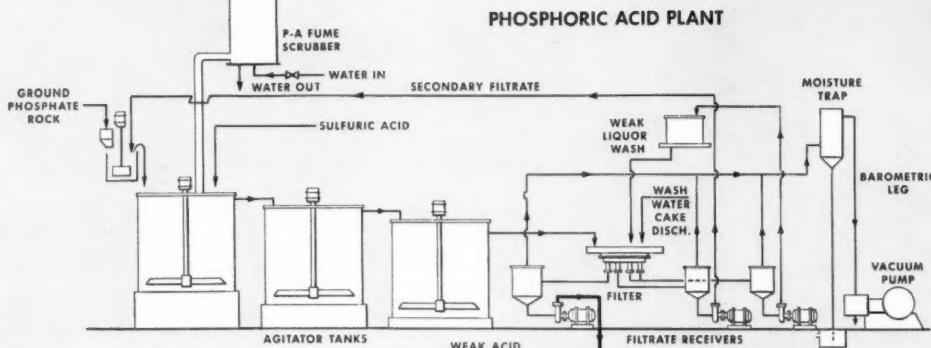
SELL AS YOU SHIP WITH

cote DRUMS

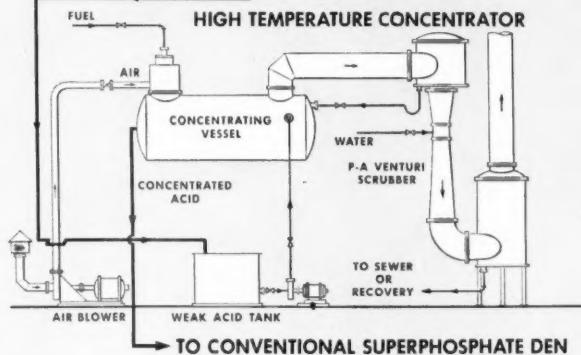
Rheem Manufacturing Plants In 22 Cities Around The World —

Plants and offices: Burlington, Linden, New Jersey • Chicago, Ill. • Houston, Texas • New Orleans, La. • New York, N.Y. • Newark, Richmond, San Francisco, San Pablo, South Gate, Calif.; Sparrows Point, Md. • Foreign Plants: Brisbane, Fremantle, Melbourne, Sydney, Australia • Bristol, United Kingdom • Buenos Aires, Argentina • Hamilton, Ontario • Lima, Peru • Rio De Janeiro, Brazil • Milan, Italy • Singapore

© 1952 RHEEM MFG. CO.



**NOW...
with
simple
equipment**



High Strength Phosphate Fertilizers

A series of tests and demonstration runs at Hattiesburg, Mississippi, has shown that enriched and triple superphosphate fertilizers can be produced on a commercial basis in conventional single superphosphate dens. This is accomplished by substituting phosphoric acid for sulfuric acid in the manufacturing process.

The diagrams above illustrate successful Chemico methods for (1) the production of phosphoric acid by the wet process; (2) the concentration of the phosphoric acid in a Chemico high temperature concentrator. By adding these facilities to your plant, enriched superphosphates (26 to 28% A.P.A.) or triple superphosphates (up to 47% A.P.A.) can readily be produced.

Chemico also offers complete triple superphosphate plants.

For further information,
write us giving details
on your specific problem.

CHEMICAL CONSTRUCTION CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY

488 MADISON AVENUE, NEW YORK 22, N. Y.

CABLES: CHEMICONST, NEW YORK

TECHNICAL REPRESENTATIVES: CYANAMID PRODUCTS LTD., LONDON • CHEMICAL CONSTRUCTION
(INTER-AMERICAN) LTD., TORONTO • SOUTH AFRICAN CYANAMID (PTY) LTD., JOHANNESBURG

CC-240



*Chemico plants are
profitable investments*

The Case of the Acid Carboy by Gayner

a continued story by
one of America's
oldest glass manufacturers



TIME-PROVEN CARBOY POINTS

- 1 Gayner glass is fully annealed. Maximum shock-resistance for safety.
- 2 Uniform, heavy walls. Strong, durable, greatest serviceability.
- 3 Easy to clean because it's GLASS. Re-usable for same or different liquids.
- 4 Resistant to chemical attack. No pores or pits to absorb water or chemicals.
- 5 Bottle held firmly by cork wedges. All corners of box securely cushioned.
- 6 Light in weight—low return costs.
- 7 Box is clear, sturdy, seasoned white pine. Bottle easy to install; convenient to handle and store.
- 8 Approved by Bureau of Explosives. MCA Standard 13-gallon carboy bottles.

CHAPTER SIX

Almost 60 years of continuous service to the chemical and process industries is an enviable record for ANY shipping container—and Gayner Glass Carboys are still winning new friends and users through sheer performance and economy.

Gayner Carboys are unquestionably the outstanding "safety package" for transporting, storing and dispensing acids, corrosive liquids and other handle-with-care products. Strong, heavy, uniform walls of glass afford maximum protection and visibility—thorough annealing assures greatest shock resistance—and by its very nature, GLASS guarantees highest resistance to chemical attack, absorption of fluids and pitting or decomposition.

From an economy standpoint, no other container of equal size and versatility can match a Gayner Glass Carboy. It introduces lowest possible maintenance and return costs, and the complete unit is convenient to handle and store. Approved by the MCA as the FIRST standard 13-gallon carboy.

Write today for the illustrated Gayner brochure giving prices and shipping details on carboy bottles, boxes and cartons.

IMMEDIATE DELIVERY ON ALL TYPES

GAYNER

SALEM, NEW JERSEY

MANUFACTURERS OF FINE GLASS CONTAINERS



GLASS WORKS

FOUNDED IN 1874

FOR CHEMICALS, DRUGS, OILS, WINES, JUICES . . .

tert-BUTYLAMINE

(CH₃)₂CH₂NH₂. M.W. 73; Sp.G. 0.690, 25°C.; R.I. 1.375, 25°C.; B.P. 44-50°C. (760 mm.) Miscible in all proportions with water and alcohol; soluble in common organic solvents. Chemical properties: Undergoes characteristic reactions of primary aliphatic amines. Gives stable monomeric amines, (CH₃)₂CH₂NH₂, with formaldehyde and other aldehydes. Gives stable carbodiimide, (CH₃)₂CH₂NHCNCO(CH₃)₂. Suggested uses: Intermediate in preparation of rubber chemicals, oil and grease additives, insecticides, fungicides, bactericides, surface-active agents, corrosion inhibitors, pharmaceuticals, textile chemicals and dyestuffs. Availability: pilot-plant quantities. Rohm and Haas Co.

N-BUTYL BENZOATE

Colorless liquid, N.W. 178.22; Sp.G. 1.0073 at 20/20°C.; B.P. 250°C. at 760 mm.; V.P. 0.1 mm. Hg. at 20°C.; Fr.P. 21.5°C.; sol. in water, <0.01% by wt. at 20°C.; sol. water in, 0.3% by wt. at 20°C.; Flash point 225°F. (Cleveland open cup). Chemical properties: undergoes usual reactions of esters on reduction or other treatment; with customary catalysts undergoes ester exchange to form new esters; reactive source of hydroxyl radical. Uses: slow evaporation solvent for ink dyes, resins, chemical intermediates; alkyl resin manufacture; odorant. Availability: commercial quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

BUTYL 2-ETHYLBUTYL MALEATE

M.W. 256.3; Sp.G. 0.981 at 20/20°C.; B.P., 155°C. at 1 mm. Hg. Chemical properties: Undergoes Diels-Alder reaction with conjugated dienes and addition reactions characteristic of compounds containing the ethylenic linkage; polymerizes and copolymerizes with other ethylenic monomers. Suggested uses: Preparation of resins for use in coatings, molded products, and textile specialties. Availability: research quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

CALCIUM *p*-AMINOSALICYLATE

(C₆H₅NO₂)₂Ca₂½ H₂O. M.W. 353.34. Contains no less than 98.0% (C₆H₅NO₂)₂Ca₂½ H₂O. White powder; sol. in water 19.7% at 20°C. Use: The same as sodium para-aminosalicylate in combination with streptomycin in treatment of tuberculosis. Particularly useful where sodium is contraindicated or where the sodium salt is not well tolerated. Calco Chemical Div., American Cyanamid Co.

CALCIUM, CRYSTALLINE

M.W. 40.08; Density at 20°C., 1.54; Hardness (M.U.'s) scale, 5; Resistivity, 10¹² ohm-cm. at 20°C.; M.P., 851°C.; B.P., 1842°C.; a free-flowing crystalline powder ranging in particle size from 50 to 400 mesh. A new and unique form of metallic calcium, the crystals act like a reactive chemical rather than a massive metal. The material is unusually pure and easily fluidized. Suggested uses: For the reduction of oxides, deoxidizing, alloying, and desulfurizing. Typical analysis: Mg 0.6%; Fe 0.01%; Pb 0.01%; Ba 0.002%; Al 0.012%; Sn 0.001%; sodium chlorides 0.4%; Nitrogen 0.0015%. Calcium oxide, 2.5%. Purity 94.97%. Availability: pilot-plant quantities. Ethyl Corp.

2-CHLORO-4-AMINOBENZOIC ACID (CAB)

C₆H₅CH₂COOH. M.W. 171.5. Chemical properties: Undergoes usual reactions of aromatic amino acids; amphoteric, soluble in acidic and basic solutions. Suggested uses: As a metabolic inhibitor, to suppress the synthesis of methionine. Availability: Research quantities. Krishell Laboratories, Inc.

5-CHLOROKYNURENIC ACID, ETHYL ESTER, AND DERIVATIVES.

5-Chloro-4-hydroxy-2-carboxy quinoline. C₁₄H₁₁ClNO₃. M.W. 251.67. M.P., 197°C.; soluble in hot alcohol, acetone, insoluble in water. Properties: Hydroxyl group replaceable by halide; can easily be de-esterified and decarboxylated to give substituted quinolines. Suggested uses: As intermediate for pharmaceuticals and dyestuffs. Commercially available. The Hilton-Davis Chemical Co. Div.

4-CHLORO-*o*-TOLOXYACETIC ACID

(CH₃)₂ClCaH₂OCH₂COOH. Assay approximately 90%; white to grey granular solid. Suggested use: Transacting herbicide recommended for greater effectiveness against certain broadleaved

weeds, and for greater safety in crops such as rice, flax, and some legumes. Availability: commercial quantities. Monsanto Chemical Co.

CHROMIC FORMATE, BASIC

Cr(HCOO)₂(OH)₂. 4H₂O. M.W. 577.11; Basicity, 22.2%; soluble in water with less hydrolysis than chromic acetate; grey-green needle-like crystals. Suggested uses: In textile industry for Vigueous and skin priming where a high-chromic formate or a solid form is required; to prevent premature formation of color lakes; in chrome tanning where presence of a formate is desired. Availability: in laboratory quantities, 39% Cr₂O₃ minimum. Mutual Chemical Co. of America.

CHROMIC PHOSPHATE

CrPO₄·XH₂O. Fine bluish-green amorphous powder. R.I. 1.61. Suggested uses: Metal protection; as a single-package vinyl-wash primer applications; for protection of steel against fresh water, salt fog; for protection of aluminum and galvanized iron. Available in semi-commercial quantities. National Lead Co.

CITRAZINIC ACID

C₆H₅NO₂. M.W. 155.11; yellowing powder, green when completely soluble in water; chars above 300°C. without melting. Suggested uses: Chemical intermediate; coupling agent; dye intermediate. Availability: pilot-plant quantities. Chas. Pfizer and Co., Inc.

COENZYME A CONCENTRATES

A partially purified coenzyme isolated from animal tissues. Purity: 2 to 10 per cent. Also contains other adenine nucleotides; essentially free of pantothenic acid. Suggested uses: In biochemical research, to study biological function of many types of acetylation and related reactions. Availability: research quantities; larger amounts on special order. Krishell Laboratories, Inc.

N-(2-CYANOETHYL)-2-METHYL-5-ETHYL PIPERIDINE

M.W. 200.176; Sp.G. 0.921 at 20/20°C.; B.P. 100°C. at 3 mm. Hg.; colorless liquid. Chemical properties: Undergoes reactions typical of tertiary amines and nitriles. Suggested uses: Intermediate for the preparation of pharmaceuticals, agricultural chemicals, resins. Availability: research quantities for experimental use. Carbide and Carbon Chemicals, a Div. of Union Carbide and Carbon Corp.

CYCLOHEXYL METHACRYLATE

C₉H₁₆O₂. M.W. 168.23; B.P., 210°C.; R.I. @ 20°C., 1.4578; Sp.G. 0.9626; colorless monomeric liquid with pleasant odor; can be polymerized to clear polymers of superior optical and physical properties. Shrinkage upon polymerization is 12.5%, one-half that of conventional methacrylate resins. Suggested uses: In optical lens systems; potting resins for electronic assemblies; protective coatings. Availability: commercial quantities. American Monomer Corp.

DEOXYGENASE

An enzyme preparation containing glucose-oxidase and catalase; buffered, stabilized solution; oxidizes glucose to gluconic acid. Suggested uses: Suitable for the removal of glucose, e.g., in the manufacture of dried egg products and for the removal of oxygen (residual air) from bottled, canned or packed food products. Commercially available. Takeamine Laboratory, Inc.

DIALLYL MALEATE

C₁₀H₁₆O₂. M.W. 196.2; B.P. @ 3 mm. 109-110°C; Sp. G. 1.077; R.I. 1.4699; pale straw colored liquid; reactive monomer, normally uninhibited. Typical reactions: Polymerization; can be reacted across double bonds with numerous adducts, such as alcohols, amines, inorganic acids, nitroparaffins, thio compounds, nitriles, acetone, etc.; with conjugated dienes and malononitriles. Suggested uses: For preparation of polymers and copolymers. Comonomers may be all types of ethylenic compounds and drying oils. Vinyl acetate and styrene have been used as comonomers with interesting results. Available in commercial quantities. American Monomer Corp.

N,N-DIALYLMELEAMINE

(CH₂=CHCH₂)₂N₂Na(NH₂)₂. M.W. 206.25; white crystalline solid; M.P., 142°C. density, 1.242 at 30°C.; soluble in acetone, butyl cellosolve, dioxane, ethanol, ethyl acetate, methyl

alcohol; insoluble in benzene, heptane, water. Chemical properties: Forms salts with mineral acids and condensation polymer with formaldehyde. Polymerizes by itself and copolymerizes with other ethylenic monomers. Suggested uses: The formaldehyde condensates are useful for molding compositions, surface coatings and paper finishes. The ethylenic copolymers should find similar applications. Availability: trial-lot quantities. American Cyanamid Co.

1,4-DIAMINODIHYDROANTHRQUINONE

C₁₄H₁₀(OH)₂(NHD)₂. M.W. 240.26. Greenish brown crystals, melting 240-250°C. (dec.). Suggested uses: Raw material for violet dyes for acetate rayon; for violet and green smoke colors for military signals; and for making red and brown vat dyestuffs. Availability: commercial quantities. The Carwin Company.

DIMIYL MALEATE

C₉H₁₆OOCCH₂CH₂COOC₂H₅. M.W. 256.3; Sp. G. 0.975 at 20/20°C.; 144°C. at 1 mm. Hg. Chemical properties: Reacts to add halogens, hydroxyl chlorides, alcohols, hydrogen cyanide, sulfur bisulfide and acids containing the double bond; polymerizes and copolymerizes with other ethylenic monomers. Suggested uses: Preparation of polymers and copolymers for use in molded products and coatings for textiles, metal, and leather; chemical intermediate. Availability: research quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

N,N'-DIBENZYLETHYLEDIAMINE DIACETATE

(C₆H₅CH₂NHCH₂)₂·2CH₃COOH. M.W. 360.44; M.P., 115°C. min.; purity, 98% min.; color, white to buff. Chemical properties: Free base reacts with aldehydes to yield 2-substituted 1,3-dibenzyltetrahydroimidazoles, with monobasic acid chlorides to give N,N'-diacyl derivatives, and with isocyanates to form 1'-2-bis(1'-benzyl-3'-alkylene) ethanes. Suggested uses: In the synthesis of pharmaceuticals and other organic chemicals. Availability: commercial quantities. Benzol Products Co.

DICHLOROACETALDEHYDE

CH₂ClCO₂CH₂O. M.W. 112.95; B.P., 88°C.; F.P., —50°C.; Sp.G. 25/4, 1.433; R.I. 25°C., 1.4533; Density, 12.0#gal.; Viscosity, 25°C., 1.32cp; Flash P. (open), 59°C.; assay 90%; DCA; colorless liquid. Chemical properties: DCA slowly and reversibly polymerizes to a white solid. Presence of the two chlorine atoms enhances the reactivity of the aldehyde as well as imparting a bifunctional characteristic to the molecule. Suggested uses: Intermediate for the preparation of pharmaceuticals, plasticizers and stabilizers of cellulose materials, insecticides, textile dyes, perfume additives. Availability: development quantities. Westvaco Chemical Division.

DICHLOROACETIC ACID

ClCH₂COOH. M.W. 128.95; purity, 98% min.; Sp.G., 1.563 at 20/4°C.; B.P., 194.4°C.; M.P., 97.2°C.; R.I. 25°C., 1.326; Density, 72°C. (D₄) 1.166; colorless liquid. Chemical properties: Strong organic acid. Suggested uses: Intermediate for organic chemicals, pharmaceuticals and dyes. Availability: semi-commercial quantities. Kay-Fries Chemicals, Inc.

1,2-DICHLOROBUTENE-3

M.W. 124.962; Boiling Range, 43-47°C. at 40 mm. Hg.; Sp.G., 1.158 at 20/20°C.; R.I. at 20°C., 1.4660; colorless liquid. Chemical properties: Undergoes reactions typical of chlorinated hydrocarbons and compounds containing the double bond. Suggested uses: Cross-linking agent and intermediate for the preparation of resins and plasticizers and solvent for oils, fats and many other organic materials. Availability: research quantities for experimental use. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

1,4-DICHLOROBUTENE-2

M.W. 124.962; Boiling Range, 72-75°C. at 40 mm. Hg.; Sp.G., 1.158 at 20/20°C.; R.I. at 20°C., 1.4887; colorless liquid. Chemical properties: Undergoes reactions typical of chlorinated hydrocarbons and compounds containing the double bond. Suggested uses: Cross-linking agent and intermediate for the preparation of resins and plasticizers and solvent for oils, fats and many other organic materials. Availability: research quantities for experimental use. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

2,4-DICHLOROPHOXYACETIC ACID, RADIACTIVE, C-14

$\text{C}_6\text{H}_4\text{Cl}_2\text{O} \cdot \text{CH}_2\text{Cl} \cdot \text{COOH}$, M.P., 138-140°C. Specific activity: 1.0 millicuries per millimole. In order to procure this radioactive compound, authorization must be from the U.S. Atomic Energy Commission must be obtained. Suggested uses: Research in plant metabolism of 2, 4-D; applications research on 2, 4-D formulations. Availability: in millicurie quantities. Tracerlab, Inc.

3-DIETHYLAMINOPROPYLAMINE

$(\text{CH}_3)_2\text{N}(\text{CH}_2)_2\text{NH}_2$, M.W., 113.91; B.P., 55°C. (10 mm.); 88°C. (50 mm.); 122°C. (200 mm.); 159°C. (760 mm.); F.P., 29°C. Flash point, (Tagliabue closed cup), 63.8°C.; R.I. at 25°C., 1.4418; density, 0.8283 g./cc. at 20°C.; miscible with acetone, ethanol, hexane, methanol, water. Chemical properties: Typical reactions of a primary amine. Suggested uses: Synthetic intermediate; curing agent for epoxy resins. Availability: trial-lot quantities. American Cyanamid Co.

DIETHYL ETHOXYMETHYLENEMALONATE

$\text{C}_2\text{H}_5\text{OCH}(\text{CH}_2\text{COOC}_2\text{H}_5)_2$, M.W., 217; purity, 98% min.; density, 1.0853 at 15°C.; R.I., 1.4625 at 20°C./D.; B.P., 279-281°C. with decomposition; insoluble in water. Chemical properties: Source for the ethoxymethylene group in synthesis. Suggested uses: Intermediate for organic chemicals and pharmaceuticals, including antimicrobials. Availability: commercial quantities. Kay-Fries Chemicals, Inc.

DIISOBUTYLENE OXIDE

$(\text{CH}_2)_2\text{C}(\text{H})\text{OCH}(\text{CH}_2\text{CH}_2)_2$, M.W., 128.21; Sp.G., 0.824 at 5/15°C.; B.P., 132-142°C. at 700 mm. Hg.; 49-50°C. at 50 mm. Hg. Chemical properties: May be hydrolyzed to a C-8 alcohol and isomerized to a C-8 aldehyde. Reacts with compounds containing an active hydrogen atom to add the hydroxy allyl group. Suggested uses: Intermediate in the preparation of surface-active agents, synthetic resins, lubricating oil additives and synthetic lubricants, rubber chemicals, pharmaceuticals, and ion exchange resins. Availability: research quantities. Carbone and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

N,N-DIISOPROPYL ETHANOLAMINE

$(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{OH}$, M.W., 145.160; Sp.G., 0.8742 at 20/20°C.; Boiling Range, 185.5-191.7°C. at 760 mm.; colorless liquid. Chemical properties: Undergoes reactions characteristic of tertiary amines and primary alcohols. Suggested uses: Intermediate for the preparation of pharmaceuticals, dyestuffs, emulsifiers, textile-finishing agents and resins. Availability: Commercial quantities. Carbone and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

DIMETHYL ACETAMIDE

$\text{C}_2\text{H}_5\text{NO}$, M.W., 60.11; Sp.G. @ 25°C., 0.9366; R.I. @ 25°C., 1.4351; R.P., 165°C. Color: type molecule; colorless liquid; miscible with water, aromatics, esters, ketones, and ethers. Suggested uses: Several applications for plastics, resins, and gums. Dissolves more difficultly soluble polymers such as polyacrylonitrile and its copolymers; readily dissolves vinyls, acrylates, cellulose derivatives, styrenes, and linear type polyesters. Available in commercial quantities. Monomer-Polymer, Inc.

DIMETHYLAMMONIUM DIMETHYLCARBAMATE (DMC)

$(\text{CH}_3)_2\text{N}(\text{COONH}_2)(\text{CH}_2)_2$, M.W., 134.17; Sp.G., 1.026 at 25/4°C.; R.I., 1.4512 at 25°C.; Absolute Visc., 63.3 cps at 25°C.; B.P., 60.2°C. (760 mm.); pH of aqueous solution, 9.4. Completely miscible with water, most alcohols, ketones, esters, benzene and other aromatics, some olefins and diolefins, and is partially miscible with paraffins; color, water white. Chemical properties: In general, reacts as though it were a solution of dimethyl amine and as such may provide a convenient source, or reservoir, of dimethyl amine; with acidic substances, alkyl halides, isocyanates, carbon disulfide, etc., the carbonyl group reacts with the solution of carbon dioxide to form products that result from reaction of dimethyl amine and the respective reactants. Suggested uses: As a selective solvent for refining operations; a convenient source of anhydrous dimethyl amine. Availability: research and development quantities. E. I. du Pont de Nemours & Co., Inc.

N,N'DI-(α -METHYL BENZYL) ETHYLENE DI-AMINE

$\text{C}_6\text{H}_5\text{CH}(\text{CH}_3)_2\text{NHCH}_2\text{CH}_2\text{NHCH}(\text{CH}_3)_2\text{CH}_3$. Pale yellow, mobile liquid soluble in most organic solvents; limited solubility in water. M.W., 268.39; B.P., 140°C. at 1 mm. Hg.; Sp.G., 0.996 at 20/20°C.; R.I. at 30°C., 1.5450. Chemical properties: Undergoes typical reactions of aliphatic secondary diamines. The two phenyl groups add some properties such as oil solubility and high boiling point. Suggested uses: Intermediate in preparation of amino salts and other addition products with limited water solubility; preparation of rubber chemicals, gas-fading inhibitors and other textile specialties. Availability: research quantities for experimental use. Carbone and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

organic solvents; limited solubility in water. M.W., 268.39; B.P., 140°C. at 1 mm. Hg.; Sp.G., 0.996 at 20/20°C.; R.I. at 30°C., 1.5450. Chemical properties: Undergoes typical reactions of aliphatic secondary diamines. The two phenyl groups add some properties such as oil solubility and high boiling point. Suggested uses: Intermediate in preparation of amino salts and other addition products with limited water solubility; preparation of rubber chemicals, gas-fading inhibitors and other textile specialties. Availability: research quantities for experimental use. Carbone and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

3,5-DIMETHYL HEXENOLIDE

$(\text{CH}_3)_2\text{COCOCH}_2\text{C}(\text{CH}_3)_2\text{CH}_2\text{O}$, M.W., 140.18; Sp.G., 1.0101 at 20/20°C.; B.P., 158°C. at 100 mm. Hg.; V.P., 0.04 mm. Hg. at 20°C.; Fr. P., 13-15°C.; Viscosity, 3.9 cps at 20°C.; R.I. at 20°C., 1.4638; surface tension, 25.9 dynes/cm at 25°C.; Sol. in water, 0.63% by wt. at 20°C.; sol. water in, 4.0% by wt. at 20°C.; soluble in most organic solvents. Chemical properties: Reactive, acetic. Can be converted to esters of 3,5-dimethyl, sorbic acid. Suggested uses: Preparation of esters of polyhydroxyl materials, upgrading of drying oils, and modification of alkyl resins. Availability: research quantities. Carbone and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

N,N-DIMETHYLHYDROXY ACETAMIDE (DMHA)

$\text{HOCH}_2\text{CON}(\text{CH}_3)_2$; M.W., 103.12; density, 1.092 at 25/4°C.; R.I., 1.4510 at 50°C.; F.P., 45°C.; B.P., 218°C. (decomp.). Very soluble in water, ethanol, and ether; diisopropyl acetone, chloroform, and benzene; practically insoluble in petroleum ether, and kerosene. Chemical properties: DMHA undergoes the reaction of a primary alcohol and can be esterified in the usual manner. Suggested uses: As a selective solvent in the separation of organic mixtures and as an intermediate in organic synthesis. Availability: experimental and development quantities. E. I. du Pont de Nemours & Co., Inc.

ETHYLENE GLYCOL DIMETHACRYLATE

$\text{C}_2\text{H}_5\text{O}_2$ Mol. Wt. 198.2; B.P. 122-126°C. @ 15 mm.; R.I. 1.4558; colorless liquid; reactive monomer inhibited with 0.06% hydroquinone. Suggested uses: As a cross-linking agent for increasing the hardness, toughness, and impact resistance of resin compositions, such as vinyl plastisols, vinyl organosols, polyesters, methacrylates, butyls, and other organic monomers for uses with other monomers in producing polymers with improved temperature and chemical resistance. Available in commercial quantities. American Monomer Corp.

5-ETHYL-2-METHYL PIPERIDINE

Pale yellow liquid soluble in most organic solvents. M.W. 127-23; B.P., 97°C. at 100 mm. Hg.; 116°C. at 200 mm. Hg.; Sp.G., 0.840 at 20/20°C.; R.I. at 30°C., 1.4425. Colorless liquid. Undergoes typical reactions of saturated heterocyclic amines; strongly basic; forms salts easily. Suggested uses: Intermediate in the preparation of rubber chemicals, corrosion inhibitors, flotation reagents, oxidation inhibitors, and amine salts. Availability: search quantities. Carbone and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

p-ETHYLNITROBENZENE

$\text{C}_6\text{H}_4\text{CH}_2\text{NO}_2$, M.W., 151.1. Yellow to brown clear mobile liquid; assay, 99-100% (including approx. 4% ortho isomer and 1% dimethylbenzene). Approx. B.P. 245-260°C.; melting point, 11.3 to 14.5°C. (soft point) (Cleveland Open Cup), 280°C.; Fire Point (Cleveland Open Cup), 280°C.; typical nitro-aromatic odor, R.I. at 25°C., 1.54. Miscible in most organic solvents, immiscible in water. Sp.G. at 25/25°C., 1.13. Weight per U.S. gallon, 9.37 lb. at 70°F. Suggested uses: Chemical intermediate in dyestuffs, pharmaceutical, and other fields. Monsanto Chemical Co.

FORMIC ACID, ANHYDROUS

HCOOH , M.W. 46.0. A clear, water white, volatile, hygroscopic liquid. B.P., 84.4°C.; 100.7°C. at 60 mm. pressure; Density 20/4, 1.2196; R.I. at 20°C., 1.3714. Suggested uses: Special purpose solvent, catalyst in organic synthesis. Availability: research samples and experimental lots by arrangement. (Caution: Harmful to skin and other tissues.) Victor Chemical Works.

2-FORMYL-3, 4-DIHYDRO-2-PYRAN

$\text{CH}_2\text{CH}(\text{CHO})\text{CH}_2\text{O}$, M.W., 112.12; Sp.G., 1.0776 at 20/20°C.; B.P., 150.6°C. at 760 mm. Hg.; V.P., 2.8 mm. Hg. at 20°C.; F.P. sets to a glass below -90°C.; Viscosity, 2.2 cps. at 20°C.; R.I. at 20°C., 1.4645; sol. in water, complete at 20°C.; soluble in most organic solvents. Chemical properties: Hydrolyzes to form alpha-hydroxy adipaldehyde; aldehyde group reacts with aldehydes, ketones, and phenols; undergoes addition reactions on double bond when aldehyde group is protected. Uses: Chemical intermediate. Availability: pilot-plant quantities. Carbone and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

GERMINE

$\text{C}_2\text{H}_5\text{O}_2\text{N}$, M.W., 510; M.P., 222°C. (dec.). An alkali; white crystalline solid. Obtainable from *Veratrum viride*, *Veratrum Album*, *Veratrum escholtzii*. Occurs in nature as hypotensive esters such as germinite and neogerminite. Availability: research quantities. Riker Laboratories, Inc.

GLUCOSE-1-PHOSPHATE

M.W. 260. A natural product, isolated from plant tissues. Chemical properties: Produces starch phosphorylative yields in presence of the enzyme phosphorylase; phosphate group easily hydrolyzed. Suggested uses: In biochemical research, in the formation of starch, glycogen or sucrose. Availability: large laboratory or pilot-plant scale. Krishell Laboratories, Inc.

GLUCONOLACTONE

$\text{C}_6\text{H}_10\text{O}_4$, M.W., 176; Sp.G., 1.76 @ 30/4°C.; M.P., 172°C.; initial pH of 10% aq. soln. 3.5; white crystalline powder. The gamma lactone of glucuronic acid which is present in essentially all fibrous and connective tissues in animals and humans. Conjugates with many toxic (glucogenic) materials and is of interest as a general detoxicant, hyaluronidase inhibitor, solubilizing agent. Commercially available. Chemical Div., Corn Products Sales Co.

GLYCOLONITRILE

HOCH_2CN , M.W., 57; purity: 70% aqueous solution; Sp.Gr. at 25°C., 1.082; R.I. at 25°C., 1.3904. Freezing Point, -35°C. pH (glass electrode), 2.5-3.5. Chemical properties: the hydroxyl group and the cyano group are reactive, giving typical derivatives via these functional groups; convenient agent for cyanomethylation. Suggested uses: Solvent for polycrylonitrile, chemical intermediate in the preparation of compounds useful as gas absorbents, sequestering agents, pharmaceuticals, insecticides, etc. Availability: commercial quantities. Rohm and Haas Co.

HEXAMETHYLPHOSPHORAMIDE

$[(\text{CH}_3)_2\text{N}]_3\text{PO}$, M.W., 179.2; colorless, clear, mobile liquid, B.P., 66°C. at 0.5 mm. and 98-100°C. at 6.4 mm. (dec.). Crystallizes on cooling, approx. 40°C.; Sp.G., 1.024 at 25/25°C.; sp. gr. 1.04; nD₂₀ 1.4509; Sp. S. 1.024 at 25/25°C.; sp. odor; wt. per U.S. Gallon, 8.55 lb. at 25°C. Soluble in benzene, heptane, carbon disulfide, carbon tetrachloride, ethanol, methanol, acetone, ethyl ether, water, ethyl acetate. Suggested use: industrial solvent. Availability: laboratory quantities; pilot-plant quantities may be arranged. Monsanto Chemical Co.

2-HYDROXY-3-NAPHTHOIC ACID HYDRAZIDE

$\text{C}_9\text{H}_8\text{NO}_2$, M.W., 202.21; M.P., 203-204°C.; pale yellow crystalline solid soluble in organic solvents and slightly soluble in H_2O . Suggested uses: For detection of carbonyl groups in ketosteroids and chromatographic separation of ketosteroids. Availability: reagent and pilot plant quantities. Dajac Laboratories Div. of Monomer Polymer, Inc.

ISONICOTINIC ACID HYDRAZIDE

$\text{C}_9\text{H}_8\text{N}_2\text{O}_2$, M.W., 137.0; M.P., 169-172°C.; soluble in water, 15 gm./100 ml. at 25°C.; white crystalline powder. Suggested uses: Treatment of tuberculosis which is resistant to streptomycin. Commercially available. Chas. Pfizer and Co., Inc.

ISOPROPYL N-3-CHLOROPHENYL CARBAMATE

$\text{m-ClC}_6\text{H}_4\text{NHCOCOCH}_2\text{CH}_3$, M.W., 213.66; Sp.Gr., 1.18 @ 30°C., M.P., 41.4°C.; R.I., 1.5395 @ 20°C., B.P., 247°C. (dec.). V.P., 149°C., 2 mm.; 161°C., 5 mm.; 177°C., 15 mm.; very slightly sol. in water; light tan color. Hydrolyzes in acids forming m-chloroaniline, CO_2 , etc. Suggested for trial use as a selective herbicide.



the seal that guarantees uniform quality

Every batch, every shipment, tank car or drum of synthetic resin, manufactured by American Alkyd is independently tested by the United States Testing Company—you receive a copy of the analysis with your shipment...you know exactly what you're getting.

Here, for the first time in the industry, is no empty promise of uniformity but delivery as per specifications.

United States Testing Company, Inc.		TEST NUMBER 1878
HOBOKEN, N. J. TELEPHONE HOBOKEN 2-1474		RECEIVED CIRCA
REPORT OF TEST		July 18, 1952.
The sample for American Alkyd Industries Carlstadt New Jersey		
Material tested: American Alkyd, Lot #17 1952, from American Alkyd Capacity: 33,000 lbs.		
Purpose of Test: To check conformance of the resin to specifications published by subject company.		

Independently tested by USTC—manufactured and guaranteed by AA



AMERICAN ALKYD INDUSTRIES

SYNTHETICS FOR THE PAINT TRADE

Broad and 14th Street, Carlstadt, N. J.

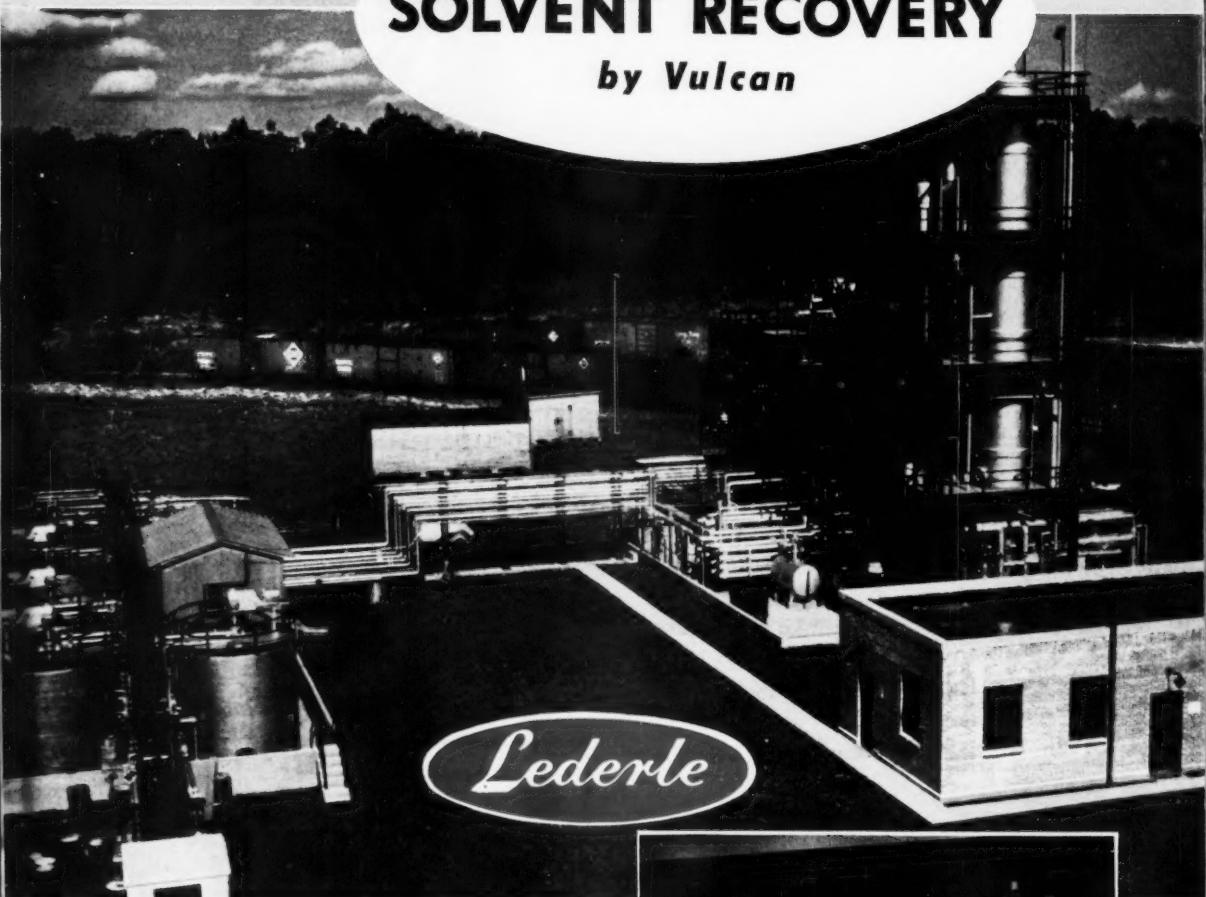
7. Solubility	Alkalies	Acids
8. weight per gallon (77°F-59°F)	8.070 (lb./gals.)	8.115 - 8.175
9. Tensile Strength at 90° Bend	8.0 Kips	0 - 5
10. Mineral Solvent Tolerance	200 lbs./100 lbs. benzene	200 lbs./100 lbs. resin
GENERAL TESTS		
11. Benzene Insolubility (90°F)	None	None
12. Phenol (77°F-59°F) Residue (15.17)	None	None

Aureomycin

and efficient

SOLVENT RECOVERY

by Vulcan



In the big new aureomycin plant of Lederle Laboratories Division of the American Cyanamid Company at Pearl River, N. Y., solvent recovery is vital. Solvents must be recovered for reuse in better than 99% purity if the process is to be economically feasible.

Vulcan in cooperation with Lederle designed a complete unit for recovery of the many solvents used. Vulcan also supplied all equipment and materials and supervised construction.

Five separate feed streams are handled in four distillation trains consisting of seven towers. Operating control of the unit is entirely automatic and is regulated from a graphic panel in the control house. Complete flexibility accommodates wide variations in flow rates and compositions of the various feed streams. Process alterations are thus possible without major changes in the solvent recovery unit.

The result? Less cost, less time lost in turning out the product.



VULCAN ENGINEERING DIVISION

VULCAN MANUFACTURING DIVISION

DIVISIONS OF THE VULCAN COPPER & SUPPLY CO.:

The VULCAN COPPER & SUPPLY CO.,
General Offices and Plant, CINCINNATI 2, OHIO

NEW YORK BOSTON PHILADELPHIA SAN FRANCISCO
VICKERS VULCAN PROCESS ENGINEERING CO., LTD., MONTREAL, CANADA

CINCINNATI

VULCAN CONSTRUCTION DIVISION • VULCAN INDUSTRIAL SUPPLY DIVISION

CW Report

Availability: commercial quantities. Columbia-Southern Chemical Corp.

ISORUBIJERVINE

$C_20H_{26}O_2N$, M.W., 410; M.P., 218°C. (needles). An alkaloid. White crystalline solid. Obtainable from *Veratrum viride* and *Veratrum Album*. Availability: pilot-plant quantities. Riker Laboratories, Inc.

JERVINE

$C_20H_{26}O_2N$, M.W., 426; M.P., 247°C. An alkaloid; white crystalline solid. Obtainable from *Veratrum viride* and *Veratrum Album*. Has characteristic absorption peaks under ultraviolet light at 250 and 360 m μ . Availability: pilot-plant quantities. Riker Laboratories, Inc.

LITHIUM CHROMATE

$Li_2CrO_4 \cdot 2H_2O$, M.W., 165.92; solubility in water, 49.94% at 30°C. Transition to anhydrous Li_2CrO_4 at 74.6°C.; solubility of anhydrous salt in commercially pure methanol, 13.4% at 0°C., and 15.7% at 25°C.; bright yellow crystals. Chemical properties similar to other chromates. Suggested uses: Similar to other soluble chromates in systems where sodium, potassium or ammonium salts may not be used; corrosion inhibitor. It has shown effectiveness as a dehumidifier in lithium chloride brines used for dehumidification in air conditioning. Availability: pilot-plant quantities, 99.5% $Li_2CrO_4 \cdot 2H_2O$ minimum. Mutual Chemical Co. of America.

LYSOZYME

A basic protein or polypeptide. M.W. about 15,000. Relatively rich in arginine and lysine, free of phosphorus. Suggested uses: Biochemical research for the hydrolysis of certain carbohydrates. Availability: research quantities, larger amounts on special order. Krishell Laboratories, Inc.

MPL MONOMER

A clear, colorless, monomeric liquid with a boiling point greater than 200°C. @ 1 mm.; Sp.G., 1.075; R.I. @ 20°C., 1.4620; Viscosity 12 cp.; insoluble in water, soluble in aliphatic hydrocarbons, and soluble in styrene, methyl methacrylate, diethyl maleate, and esters; allyl ester, vinyl acetate, acrylic acid, acrylonitrile, and aromatics. Suggested uses: As a cross-linking agent for use with monomers and resin compositions in producing resins which exhibit improved chemical and temperature resistance, improved strength, toughness, hardness, and impact resistance. MPL is particularly suggested for use with vinyls, such as plastols and organosols. Available in commercial quantities. American Monomer Corp.

MANGANESE DIOXIDE, SYNTHETIC

STRUCTURE

Mn_2O_3 . Uniform black powder. Apparent density, 17.25 g./cu. in.; crystal morphology, gamma phase. Available oxygen as % Mn_2O_3 , 85% min.; total manganese as % Mn, 58.00% min.; absorbed moisture as % H₂O, 1.00% max.; iron as % Fe (soluble in CH_3COOH), 0.30% max.; silicon as % Si, 0.5% max.; total alkali and alkaline earth metals, 1.0% max.; total heavy metals (other than Fe, Pb), 0.3% max.; lead as % Pb, 0.2% max. Suggested uses: In the manufacture of dry cell batteries, as an oxidizing agent, as a glass decolorizer, and as a catalyst in vapor phase oxidations. Commercially available. Western Electrochemical Co.

METHACRYLIC ACID, GLACIAL

$CH_2C(CH_3)COOH$, M.W., 86; purity 99%; Sp.Gr., 1.014. Water content 0.1%. M.P., 14-16°C.; B.P., 159-153°C./760 mm. Chemical properties: Readily copolymerizes with butadiene, styrene, and other monomers in most aqueous systems (commercially available 50% methacrylic acid used in aqueous systems). Undergoes Diels-Alder reaction with dienes; addition reactions at double bond with amines, mercaptans, alcohols, halogen acids. Can be esterified with alcohols to give methacrylic esters. Availability: pilot-plant quantities. Rohm and Haas Co.

METHIONINE ANALOGUE

($CH_3SCH_2CH_2CHOHCOO$)₂Ca. Calcium salt of D,L-alpha-hydroxy-gamma-methyl mercaptobutyric acid. 33% water, free from light tan powder. Soluble in water, insoluble in common organic solvents. Suggested uses: Feed additive for poultry and swine feeds; pharmaceutical; and as an intermediate in pharmaceutical synthesis. Availability: commercial quantities. Monsanto Chemical Co.

α -METHYLBENZYL AMINE

Water-white liquid, mild ammoniacal odor. M.W.,

121.18; Sp.G., 0.9535 at 20/20°C.; R.I. at 20°C., 1.5366; B.P., 188.5°C. at 760 mm.; V.P., 0.5 mm. Hg. at 20°C.; F.P., sets to a glass below -65°C.; sol. in water, 4.8% by wt. at 20°C.; sol. in ether, 48.0% by wt. at 20°C.; softening Point, 175°F. (Cleveland open cup); soluble in most organic solvents and hydrocarbons. Chemical properties: Undergoes typical reactions of aliphatic primary amines; usual reactions on the benzene ring are possible when the amine group is protected by acetylation. Suggested uses: Preparation of amine salts and amides; as emulsifying agent; preparation of gas-fade "resists" and textile specialties. Available in commercial quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

α -METHYLBENZYL CELLOSOLVE*

Water-white, mobile liquid with mild pleasant odor. α -Methyl-Benzyl Cellosolve is an aryl substituted alkyl ether and exhibits an extremely low solubility in water and a relatively high solvency for water. This property suggests its use as a coupling agent for water in certain water-immiscible systems. It is also suggested for trial as a high-boiling solvent for inks, metal coatings, adhesives and for use as an intermediate in the synthesis of perfume fixatives, plasticizers, germicides, and pharmaceuticals. Availability: research quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

α -METHYLBENZYL DIETHANOLAMINE

Water-white liquid, mild ammoniacal odor. M.W., 209.28; Sp.G., 1.0812 at 20/20°C.; R.I. at (20°C.), 1.5392; B.P., 244°C. at 50 mm.; V.P., less than 0.01 mm. Hg. at 20°C.; F.P., sets to a glass below -7°C.; sol. in water, 5.3% by wt. at 20°C.; sol. in ether, 28.0% by wt. at 20°C.; softening point, 370°F. (Cleveland open cup); soluble in most organic solvents. Chemical properties: Undergoes reactions typical of aliphatic tertiary amines; usual reactions on the benzene ring are possible when the hydroxyl groups are protected by acetylation; forms quaternary salts by reaction with alkyl halides. Suggested uses: Preparation of amine salts; as emulsifying agent; preparation of quaternary ammonium salts for detergents and germicides. Availability: commercial quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

α -METHYLBENZYL ETHER

Water-white, mobile liquid with faint odor. M.W., 226.30; Sp.G., 1.0017 at 20/20°C.; B.P., 286.3°C. at 760 mm.; V.P., <0.01 mm. Hg. at 20°C.; F.P., sets to a glass below -30°C.; sol. in water, less than 0.01% by wt. at 20°C.; sol. in ether, 0.1% by wt. at 20°C.; Flash point, 275°F. (Cleveland open cup); soluble in most organic solvents. Chemical properties: Dehydrates readily to styrene; hydroperoxide and condensations to phenyl methyl carbonyl; other reactions typical of secondary aliphatic ether; most reactions on benzene ring result in poor yields because of tendency to dehydrate to styrene and polymerize. Suggested uses: High-boiling inert solvent (except under dehydrating conditions); high-boiling styreneating agent for alkyl and oleo-resinous varnish constituents, softener for synthetic rubbers. Availability: commercial quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

N-METHYL-N,N-BIS(3-AMINOPROPYL)AMINE

M.W., 145.176; B.P., 85°C. at 2.5 mm. Hg.; R.I. at 30°C., 1.4700; colorless liquid. Chemical properties: Undergoes reactions typical of primary and tertiary amines. Suggested uses: Intermediate for the preparation of resins, rubber chemicals, and oil additives. Availability: research quantities for experimental use. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

N-METHYL-N,N-BIS (2-CYANOETHYL)AMINE

$C_6H_5CH_2N(CH_3)C_2H_5CN$, M.W., 137.112; B.P., 151°C. at 3.5 mm. Hg.; Sp.G., 0.978 at 30°C./20°C.; R.I. at 30°C., 1.4582; colorless liquid. Chemical properties: Undergoes reactions typical of nitriles and tertiary amines. Suggested uses: Intermediate for the preparation of pharmaceuticals, resins and plasticizers. Availability: research quantities for experimental use. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

* Trade mark

N,N'-METHYLENEBISACRYLAMIDE

($CH_2=CHCONH$)₂CH₂, M.W., 154.17; white crystalline solid; M.P., 185°C. (dec.); density, 1.235 at 30°C.; soluble in water, butyl cellosolve, ethanol, methyl alcohol; slightly soluble in acetone, chloroform, dioxane, ethyl acetate; insoluble in benzene, heptane. Chemical properties: Reactions typical of the activated double bonds with other olefinic monomers. Suggested uses: cross-linking agent for use with ethylenic resins, molding compounds, surface coatings, and textile and paper finishes. Availability: trial-lot quantities. American Cyanamid Co.

METHYL GLUCOSIDE

(CH_2OH)₆C, M.W., 194; M.P., 165 ± 1°C.; Sp.G., 1.46 at 30/4°C.; solubility, 63 g./100 g. water; white crystalline powder. A synthetic polyol for use in esterification and alcoholysis reactions. A stable, non-hygroscopic, crystalline compound, it offers four esterifiable hydroxyl groups for the preparation of synthetic drying oils and varnishes, resins, plasticizers, and surface active agents. Availability: pilot-plant scale. Chemical Div., Corn Products Sales Co.

N-METHYL ISOPROPYLAMINE

$CH_3NHCH(CH_3)_2$, M.W., 73.14; B.P., 51-53°C. A dialkylamine with moderate steric hindrance, potentially available at a low price. Availability: experimental quantities. Sapon Laboratories, Inc.

2-METHYL-2-PENTENOL-1

$CH_3CH_2CH(CH_3)CH_2OH$, M.W., 100.16; B.P., 84°C. at 50 mm. Hg.; density, 0.854 at 20/15.6°C.; R.I. at 30°C., 1.4418. Chemical properties: Undergoes typical reactions of a primary alcohol and the usual addition reactions to the double bond. Suggested uses: Intermediate in the preparation of pharmaceuticals, preparation of esters for copolymerization. Availability: research quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

α -NAPHTHYL ISOCYANATE

M.W., 169; amine equivalent, 169 (grams of isocyanate per gram mole of secondary amine); B.P., 115-117°C. (3 mm. Hg.), 270°C. (760 mm.); specific gravity at 25°C., 1.18. A liquid organic isocyanate. Reacts with compounds containing an active hydrogen atom; decomposes slowly in water or on exposure to atmosphere; soluble in toluene, also dichlorobenzene and xylene. Suggested uses: For identification of alcohols and amines and as a dye intermediate. Availability: semi-commercial quantities. Monsanto Chemical Co.

NEOPROTOVERATRINE

$Ca_2H_5O_2N$, M.W., 810; B.P., 225°C. An alkaloid. White crystalline solid, strongly sternutatory obtainable from *Veratrum viride*. It is a tetraster of the alkaline protoverine, $Ca_2H_5O_2N$. Hypotensive activity is 0.38/kg/min. for 10 minutes by Stutzman-Maison method of assay. Availability: research quantities. Riker Laboratories, Inc.

OCTAMETHYLPYROPHOSPHORAMIDE

[$(CH_3)_2N$ POPO₂(N CH_3)₂]. Assay 70%; yellow to brown liquid; Sp.G. at 25/25°C., 1.109; soluble in water, ethanol, acetone, chloroform, benzene, ether, acetone, dioxane, xylene, etc.; insoluble in heptane. Stable with 1N NaOH for 24 hours, decomposed by dilute HCl. Suggested use: Translocating or systemic insecticide for greenhouse or agricultural use. Availability: semi-commercial quantities. Monsanto Chemical Co.

OCTYL DIHYDRO PHOSPHATE 80%

$Ca_2H_5OPO(OH)_2$. Concentration 80% to 90%; M.W., 210. A light amber liquid which freezes below 0°C.; undistillable; stable at temperatures well above 100°C. A dibasic acid very slightly soluble in water, but miscible in all proportions with common organic solvents. Density 1.08. Suggested uses: Water insoluble modification of phosphoric acid; solvent; polymerization catalyst; resin and intermediate for surface active materials, lubricant additives, and corrosion inhibitors. Availability: Research quantities. Victor Chemical Works.

OLEIC ACID, VEGETABLE

Emersol 240. Elaine. An oleic acid of all vegetable source. Possesses excellent emollient, emulsifying and bland properties. Assay, 84.90; Acid Value, 191-195; Saponification Value, 192-196; titr. 15-20°C.; Color (Lubrol 514° cell), 15V/3R max. Chemical properties: reactions are similar to oleic acid and can be used

CW Report

for the same applications. Availability: commercial quantities including tankcars. Emery Industries, Inc.

OLEIC ACID VEGETABLE, LOW TITER

Emery 0-844-R. Similar to above except with a titer in the range of 8C. Availability: pilot quantities, commercial quantities on reasonable advance notice. Emery Industries, Inc.

OXAMIDE

$\text{NH}_2\text{COOCH}_2$ M.W. 88. White monoclinic needles. M.P. 417°C, partially sublized when heated; Density 1.667; Solubility: 1 part in 2700 parts of water at 7°C; 6 parts in 1000 parts of water at 100°C. Suggested use: Stabilizer for nitrocellulose; intermediate in organic synthesis. Availability: Research quantities. Victor Chemical Works.

PHENYLTRICHLOROETHANOL

($\text{C}_6\text{H}_5\text{COHCl}_2$) M.W. 225.5; B.P. 15 mm., 145°C.; Sp.G. 25/4, 1.422; R.I. 25°C., 1.564; Density 11.7#./gal.; acidity as HCl, 0.1% max.; Viscosity 25°C., 86.2 cP; Flash P. (open) 159°C.; light amber liquid insol. in H₂O; completely sol. in ethanol, methanol, and CCl₄. Chemical properties: Its bifunctional character makes this material effective for a wide variety of chemical reactions. Suggested uses: Intermediate in the preparation of perfume bases, pharmaceuticals, polymerizable monomers, insecticides, fungicides and other agricultural chemicals. Availability: development quantities. Westvaco Chemical Division.

PIPERIDONE-2

M.W. 99.08; B.P. 265°C. at 760 mm. Hg.; M.P. 39-40°C.; white crystalline solid. Chemical properties: A cyclic amide which undergoes reactions typical of N-substituted amides, yielding delta-aminovaleric acid or ester on hydrolysis or delta-aminoleucine. Suggested uses: Intermediate for the preparation of pharmaceuticals, resin, rubber chemicals and dyestuffs. Availability: research quantities for experimental use. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

POTASSIUM TRIPOLYPHOSPHATE

K₃PO₆. Sequestering value—9.0g. Ca/100g. KTPP: Sol. in H₂O, 30°C.—200g./100g. Heat of Sol., 18C.—10.5 kcal./mole; total PO₄ 46.7% by wt.; total K₂O 51.8% by wt.; pH 1% sol. 9.9; white powder. Chemical properties: Shows a pronounced ability to sequester or prevent the formation of insoluble soaps by forming soluble phosphate complexes with calcium, iron and magnesium ions. Suggested uses: Formulation of liquid soaps; sequestering agent; dispersing agents. Commercially available. Westvaco Chemical Division.

PROPYLENE CARBONATE

M.W. 102.09; Sp.G. 1.2069 at 20/20C.; B.P. 242°C. at 760 mm. Hg.; F.P. —48.8°C.; Visc., 2.8 cP. at 20°C.; R.I. at 25°C., 1.4200. Sol. in water, 19% by wt. at 20°C.; Sol. in 2% by wt. at 20°C. completely miscible with acetone, methanol, ethyl ether, benzene, carbon tetrachloride. Chemical properties: Reacts with numerous amines, phenols, alcohols and similar compounds containing an active hydrogen to give hydroxypropyl derivatives. Suggested uses: Adhesive for certain natural and synthetic resins; intermediate in the synthesis of pharmaceuticals, agricultural chemicals, rubber additives, and other organic chemicals. Availability: research quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.; Jefferson Chemical Co., Inc.

PROTOVERATRINE

$\text{C}_20\text{H}_{21}\text{O}_3\text{N}$ M.W. 752; M.P. 258°C. (dec.). An alkaloid. White crystalline solid, strongly sternutatory. Obtainable from Veratrum viride or Veratrum Album. It is a triester of the alkaline protoverine, $\text{C}_20\text{H}_{21}\text{O}_3\text{N}$. Protoverine is conjugated with Acetic, Methylacetic and Methylmethylacetic acids. Hypotensive activity, 0.25g./ml. for 10 minutes by Stutzman-Maison method of assay. Availability: research quantities. Riker Laboratories, Inc.

PSEUDOCUMIDINE

$\text{C}_6\text{H}_5(\text{CH}_3)_2\text{N}_2$ M.W. 135.11; distillation range 220-245°C. Soluble in benzene; very slightly soluble in water. Properties: A primary amine susceptible to all reactions of its class. Suggested uses: Solvent, intermediate for dyes and pharmaceuticals. Availability: commercial quantities. The Hilton-Davis Chemical Co. Div.

SILICON POWDERS

Dark grey crystalline powder, 20 mesh, metallic luster. Suggested uses: As a semiconductor,

in the preparation of silicon crystals for crystal rectifiers in microwave receivers. Availability: Previously supplied at 99.75% purity, now available at 99.85% and 99.95% purity in commercial quantities. Tungsten and Chemical Division, Sylvania Electric Products, Inc.

SILVER METAPHOSPHATE

(AgPO₄)_x. A powdered glass which does not discolor on exposure to light. Very slightly soluble in water. Refractive Index near 1.7. Softening point about 200°C. Converts to crystalline form if held at 200°C. Typical analysis: Ag 57.2%; PO₄ 37.2%; loss at 800°C. 1.6%. Suggested use: Special optical glass. Availability: pilot-plant quantities. Victor Chemical Works.

SODIUM ASCORBATE

CoH₇NaO₄. M.W. 198.11; M.P. 218C. (decomp.); soluble in water, 85.4 g./100 ml. at 25°C. Suggested uses: Tasteless source of vitamin C; antioxidant; preparation of sterile solutions for parenteral injections. Commercially available. Chas. Pfizer and Co., Inc.

SODIUM COPPER CHROMATE, BASIC

Na₂O₄Cr₂O₇·4CuO·3H₂O. M.W. 572.73; slightly soluble in water with partial hydrolysis; finely crystalline purplish brown powder. Suggested uses: as anti-corrosion and anti-fouling pigment for marine paints; may possess mildew-inhibiting and fungicidal properties. Availability: pilot-plant quantities. Mutual Chemical Co. of America.

SODIUM GLUCONATE

NaC₆H₁₁O₆. M.W. 218.13; soluble in water, 35 g./100 ml. at 25°C.; white crystalline powder (technical grade); tan-colored crystalline powder (commercial grade). Suggested uses: Sequestering agent for iron in all pH ranges and in the presence of free caustic; photographic processing aid; metal plating baths; mineral tanning of leather; water-base paints; emulsifier for processed cheese. Commercially available. Chas. Pfizer and Co., Inc.

SODIUM GLUCONATE, PENTAHYDRATE CRYSTAL

Na₂S₅H₂O. Form. Weight, 168.14. In the new pentahydrate form, the compound is temperature-stable and will not melt or become discolored during storage at temperatures up to approximately 90°C. The older form, with 9 water of crystallization, is unstable in heat and decomposes at 100-115°C. Prepared in the crystal form, forms a clear, colorless solution in water. Used as an analytical reagent; in manufacture of dyes, photographic preparations; in desulfurizing viscose rayon; as a chemical intermediate. Availability: laboratory reagent. J. T. Baker Chemical Co.

STYRENATED FATTY ACIDS

Intermediate with no free styrene odor for preparing styrenated alkyd resins of quick set and dry. At 100% solids: M.W. 60C.; acid no. 68-75; styrene content, 48%. At 60% solids in xylol: color, 12 Gardner; viscosity, E-H. Availability: commercial quantities. Woburn Chemical Corp.

TETRAETHYLAMMONIUM DIHYDROGEN ORTHOPHOSPHATE

(C₂H₅)₄NH₄PO₄. A white crystalline powder, extremely soluble in water. Suggested use: In pharmaceuticals. Availability: experimental quantities only. Monsanto Chemical Co.

TETRAHYDROXYRAN-2-METHANOL

CH₃CH₂OCH(CH₂OH)CH₂CH₃. M.W. 116.16; Sp.G. 1.0272 at 20/20C.; B.P. 187.0°C. at 760 mm. Hg.; V.P. 0.4 mm. Hg. at 20°C.; Viscosity, 11.0 cP. at 20°C.; R.I. at 20C., 1.4581; sol. in water, complete at 20°C. Chemical properties: Reacts as a primary alcohol; ring structure more stable than tetrahydroxypropan ring. Suggested uses: ethers formed with dicarboxylic acids and long chain monohydroxy acids are of interest as plasticizers for vinyl resins; high-boiling solvent and coupling agent; preparation of surface-active agents and lubricating oil additives. Availability: development quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

TETRAMETHYLOL ACETYLENE DIUREINE

M.W. 262.22; M.P. 137-138°C.; Sol. in water, approx. 50% by wt. at 25°C. Chemical properties: Contains four reactive hydroxyl groups and two ketone groups which make it useful as a cross-linking and insolubilizing agent for proteins and polyhydroxyl materials such as starch and "Cellosize"** hydroxyethyl cellulose.

* Trade-mark

Suggested uses: It is of primary interest as a resin for shrink-proofing and crease-proofing textile fabrics. Availability: research quantities. Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp.

THIOPHOSPHORYL CHLORIDE

PCl₃S. M.W. 169.4; Sp.G. 25/4-1.630; B.R. 119-127.5°C., 95% (2.5-97.5ml) 4.0C. max.; clear, colorless to slightly yellow liquid; characteristic pungent odor. Suggested uses: A basic intermediate for production of high-activity insecticides such as parathion and other thiophosphates, and as an additive for lubricating oils and extreme pressure lubricants. Commercially available. Westvaco Chemical Division.

TRICHLOROETHANOL

CCl₃CH₂OH. M.W. 149.5; B.P. 765 mm. 150°C.; F.P. 13 C min.; Sp.G. 25/4 1.541; Acidity as HCl 0.1% max.; R.I. 25°C. 1.4854; Viscosity 2.5-3.0 cP.; colorless liquid, soluble in H₂O and completely sol. in ethanol and CC₁₄. Chemical Properties: Fundamentally those of a primary aliphatic alcohol but has weak acid properties since, under carefully controlled conditions, the Na salt can be prepared using NaOH. Suggested Uses: Intermediate in the preparation of pharmaceuticals, extreme pressure lubricant additives, herbicides, anti-oxidants and stabilizers for use in rubber and synthetic resins, flame proofing agents for textiles. Availability: development quantities. Westvaco Chemical Division.

TRICHLORONITROPROPANOL

CCl₃CHOCH₂NO₂. M.W. 44.0; Sp.G. 45/4, 1.605; M.P. 42°C.; B.P. 5 mm. 120°C.; Density 13.5 #/gal.; R.I. 35 C. 1.501; Flash P. (open) 177°C.; crystalline solid; partially sol. in H₂O and CC₁₄; completely sol. in ethanol and diethyl ether. Chemical Properties: Capable of a wide variety of reactions by virtue of its functional character. Suggested Uses: As a plasticizer and softening agent, coupling agent, anti-foam agent; and as an intermediate in the preparation of agricultural chemicals, pharmaceuticals, anti-oxidants, stabilizers, resin-curing agents, petroleum additives. Availability: development quantities. Westvaco Chemical Division.

TRIETHYL THIONOPHOSPHATE

(C₂H₅O)₃P. M.W. 198.22; clear, colorless to straw-colored liquid, B.P. 100C. at 16 mm. and 216C. at 745 mm. (decomp.). Crystallization Point, approx. 2.1C.; R.I. 1.447 at 25°C.; Sp.G. 1.064 at 25/25C.; characteristic, strong odor; wt. per U.S. Gallon, 8.9 at 25°C. Sol. in benzene, heptane, carbon disulfide, carbon tetrachloride, chloroform, diethyl ether, ethyl acetate; Insol. in water. Surface tension, dynes/cm. 29.65 at 20°C. Distilled material is now available in large laboratory quantities. Larger quantities may be supplied in the future if interest develops. Suggested use: intermediate for chemical syntheses. Availability: large laboratory quantities. Monsanto Chemical Co.

TRIHEXYL PHOSPHITE

(C₂H₅O)₃P. M.W. 334.5; Sp.G. 0.897 at 20/4C.; R.I. 1.4420 at 20C.; B.P. 135-41°C. at 0.2 mm. flash point 160°C.; fire point 180°C.; insol. in water, hydrolyzes very slowly; miscible with alcohol, acetone, benzene, ether, heptane, carbon tetrachloride and most of the common organic solvents. Chemical properties: Undergoes selective reactions with organic and inorganic compounds and is useful in preparing phosphates, phosphonates, thiophosphates, pyrophosphates, hypophosphites and other organic compounds of phosphorus for use in dyestuffs, pesticides, pharmaceuticals, lubricants, and plastics. Availability: semi-commercial quantities. Virginia-Carolina Chemical Corp.

TRISOCYCTYL PHOSPHITE

(C₂H₅O)₃P. M.W. 418.6; Sp.G. 0.891; R.I. 1.4498 at 20C.; B.P. 161-4C./0.3 mm.; flash point 195°C.; fire point 210°C.; insol. in water, hydrolyzes very slowly; miscible with alcohol, acetone, benzene, ether, heptane, carbon tetrachloride, and most of the common organic solvents. Chemical properties: Undergoes selective reactions with organic and inorganic reagents and is useful in preparing phosphates, phosphonates, thiophosphates, pyrophosphates, hypophosphites and other organic compounds of phosphorus for use in dyestuffs, pesticides, pharmaceuticals, lubricants, and plastics. Availability: semi-commercial quantities. Virginia-Carolina Chemical Corp.

2,4,7-TRINITROFLUORENONE

C₁₂H₇N₃O₇. M.W. 315.19; M.P. 175.5-176.5°C.;



Make Your Own Tests

Of These **Baker**

METALLIC SOAPS

Studies made by our technicians suggest a wider range of usefulness, plus improved performance, for these ricinoleates compared with metallic stearates.

They are applicable in a very wide field. A trial run in any of the categories listed below should develop worthwhile production advantages.

Barium
Ricinoleate

Cadmium
Ricinoleate

Calcium
Ricinoleate

Magnesium
Ricinoleate

Zinc
Ricinoleate

Adhesives • Anti-corrosive agents • Concrete
Cosmetics • Emulsions • Greases • Inks • Lacquers
Lubricants • Oils • Plastics • Protective coatings
Rubber • Suspensions • Varnish • Vinyl stabilizer
Waterproofing agents • Wire-drawing compounds

Cooperation of our Sales-Service
Department is always available.

The convenient coupon clipped to your
letterhead will bring you desired samples.

The Baker Castor Oil Company
120 Broadway, New York 5, N. Y.

Please send samples of the following
Ricinoleates:

Barium **Cadmium** **Zinc**
Calcium **Magnesium**

Name _____
Title _____
Firm _____
Address _____

ESTABLISHED
1857
THE Baker **CASTOR OIL COMPANY**

120 BROADWAY, NEW YORK 5, N. Y.

LOS ANGELES • CHICAGO

Chemicals for Industry and Laboratory

INDUSTRIAL CHEMICALS FROM HARSHAW CHEMICAL

Electroplating Salts, Anodes and Processes	Preformed Catalysts, Catalytic Chemicals
Driers and Metal Soaps	Synthetic Optical Crystals
Ceramic Opacifiers and Colors	Agricultural Chemicals
Fluorides	Fungicides
Glycerine	Chemical Commodities

THE HARSHAW CHEMICAL CO.

CLEVELAND 6, OHIO

Cleveland • Chicago • Cincinnati • Detroit • Houston
Los Angeles • New York • Philadelphia • Pittsburgh

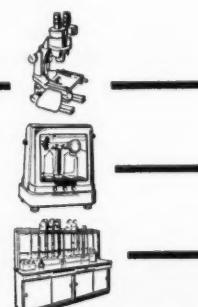
LABORATORY APPARATUS & CHEMICALS FROM HARSHAW SCIENTIFIC

Laboratories need apparatus and chemicals to carry on their work. Thousands of items are carried in stock by Harshaw Scientific. Your requirements can be filled, whether you need chemicals and apparatus for a single experiment, or to furnish a complete laboratory. Branch offices and stocks are maintained in convenient locations to help you obtain your requirements within a short time.

HARSHAW SCIENTIFIC DIVISION OF THE HARSHAW CHEMICAL CO.

CLEVELAND 6, OHIO

Cleveland • Cincinnati • Detroit • Houston
Los Angeles • Philadelphia



CW Report

color, bright yellow crystalline. Enters into complex formation with polyaurocarbonyl hydrocarbons and their derivatives. The complexes are brightly colored and of high, sharp, melting points. Suggested uses: Ease of formation and stability of complexes makes possible identification of condensed ring system compounds. Availability from stock, in research quantities. Dajac Laboratories. Div. Monomer-Polymer, Inc.

TRI-2-PROPYLPHOSPHITE

$(\text{CH}_2)_2\text{P}(\text{O})_2\text{P}$. M.W., 208.2; Sp.G., 0.914 at 20/4C.; R.L., 1.4101 at 20C.; B.P., 94.6C. at 50 mm.; flash point 75C.; fire point, 70C.; insol. in water, slowly hydrolyzes; miscible with alcohol, acetone, benzene, ether and most of the common organic solvents; odor, sweet characteristic; colorless liquid. Chemical properties: Undergoes selective reactions with organic and inorganic reagents and is useful in preparing phosphates, phosphonates, thiophosphates, phosphites, hypophosphites, and other organic compounds of phosphorus for use in duststuffs, pesticides, pharmaceuticals, lubricants, and plastics. Availability: semi-commercial quantities. Virginia-Carolina Chemical Corp.

TRISILVER ORTHOPHOSPHATE

Ag_3PO_4 . A brilliant yellow powder, insoluble in water and common organic solvents. Suggested uses: As a catalyst; raw material for special glass formulations; antiseptic and biocide; special pigments. Availability: experimental quantities. Monsanto Chemical Co.

UREA, RADIOACTIVE, C-14

$(\text{NH}_2)_2\text{C}^{14}\text{O}$. M.P., 132. Specific Activity 1.0 millicuries per millimole. In order to procure this radioactive compound, authorization from the U. S. Atomic Energy Commission must be obtained. Suggested uses: Intermediate for the preparation of carbon-14-tagged purines, barbiturates, and other pyrimidines, urea containing plastics. Availability: in millicurie quantities. Tracerlab, Inc.

VINYL BENZOATE

$\text{CH}_2\text{CHOCOC}_6\text{H}_5$. M.W., 148.15; Sp.G., 1.0703 at 20/20C.; B.P., 172C. at 300 mm. Hg.; V.P., 0.2 mm. Hg. at 20C.; R.L., at 20C., 1.2626; Visc., 1.8 cps at 20C.; oily liquid; sol. in water, less than 0.01% by wt. at 20C.; sol. of water in, 0.32%; by wt., at 20C. Chemical properties: Polymerizes slowly alone and copolymerizes with other ethylenic monomers. Polymers have good water-resistance and have higher softening points than polyvinyl acetates. Polymers are brittle at low temperatures. Suggested uses: Copolymers are useful as coating resins for textiles and for leather substitutes. Copolymers with vinyl acetate are compatible with certain phenolic resins, providing a flexible coating for metals, water-repellent coatings for wrapping paper, and resin bases for washable wall paints. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.; Monsanto Chemical Co.

VINYL BUTYRATE

M.W., 114.14; Sp.G., 0.9023 at 20/20C.; B.P., 116.5 at 760 mm. Hg.; F.P., -86.8C.; R.L., at 20C., 0.45 mm. Hg.; Visc., 1.8 cps at 20C.; Visc., 0.60 cps at 20C.; sol. in water, less than 0.30%; by wt. at 20C.; completely miscible with acetone, benzene, ethyl ether, heptane, methanol, carbon tetrachloride. Chemical properties: Polymerizes alone and copolymerizes with other ethylenic monomers. Polymers are more water-resistant than polyvinyl acetates, and less brittle at low temperatures. Suggested uses: Preparation of specialty rubbers, laminating resins, pressure sensitive adhesives, chewing gum resins, coating compounds for metals, textiles and leather. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

VINYL CROTONATE

$\text{CH}_2\text{CHOCOCHCH}_2$. M.W., 112.12; Sp.G., 0.9434 at 20/4C.; B.P., 133.5C. at 760 mm. Hg. Chemical properties: Polymerizes and copolymerizes with other ethylenic monomers. Homopolymers are relatively brittle and are insoluble in water and most organic solvents. Bi-functional allyl ester, used as a cross-linking agent, when used as a copolymer can be made to polymerize in two steps, the second step providing a cross-linking or curing action. Suggested uses: As cross-linking agents in various copolymers to raise the softening point and increase chemical and abrasion resistance. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

VINYL-2-ETHYL HEXOATE

M.W., 170.24; Sp.G., 0.8751 at 20/20C.; B.P., 185.5C. at 760 mm. Hg.; V.P., 0.3 mm. Hg. at 20C.; R.L., at 20C., 1.4262; sol. in water, less than 0.01% by wt. at 20C.; sol. water in, 0.30%; by wt. at 20C. Visc., 1.2 cps at 20C. Chemical properties: Polymerizes alone and copolymerizes with other ethylenic monomers to give polymers that are more water-resistant and less brittle at low temperatures than polyvinyl acetates. Suggested uses: Polymers and copolymers are of interest as coating compounds for metals, textiles, and leather; pressure sensitive adhesives; laminating resins; and specialty rubbers. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

VINYL FORMATE

$\text{CH}_2\text{CHCOCOH}$. M.W., 72.06; Sp.G., 0.9651 at 20/20C.; B.P., 46.9C. at 760 mm. Hg.; V.P., 270 mm. Hg. at 20C.; R.L., at 20C., 1.3859; Visc., 0.36 cps at 20C.; colorless liquid; sol. in water; hydrolyzes at 20C.; completely miscible with acetone, benzene, ethyl ether, heptane, methanol, carbon tetrachloride at 25C. Chemical properties: Polymerizes readily alone and copolymerizes with other ethylenic monomers. Polyvinyl formates are clear solids, harder than polyvinyl acetates. They are more resistant than polyvinyl acetates to solvents such as acetone, benzene, and water. Polyvinyl formate is rapidly hydrolyzed by heating with water at 100C. to give polyvinyl alcohol. Suggested uses: Pharmaceutical intermediate; preparation of specialty rubbers, coatings for metal, paper, textiles, and leather; preparation of polyvinyl alcohol which is widely used as a binder, thickener, stabilizer and sizing material. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

N-VINYL PIPERIDONE-2

M.W., 125.096; B.P., 230C. at 760 mm. Hg.; M.P., 42C.; white crystalline solid. Chemical properties: Undergoes reactions typical of di-substituted amides and amine containing the $\text{CH}_2=\text{CH}-$ group. Solubility: miscible with acetone, benzene, ethyl ether, heptane, methanol, carbon tetrachloride. Chemical properties: Soluble in water, $\text{CH}_2=\text{CH}-$ group. Solubility: miscible with acetone, benzene, ethyl ether, heptane, methanol, carbon tetrachloride. Chemical properties: Polymerizes alone, copolymerizes with other ethylenic monomers. In general polyvinyl piperidone-2 is more brittle than polyvinyl acetates and are less brittle at low temperatures. Suggested uses: Preparation of specialty rubbers, pressure sensitive adhesives, chewing gum resins, laminating resins, coatings for textiles, metal, and leather. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

VINYL PROPIONATE

M.W., 100.11; Sp.G., 0.9173 at 20/20C.; B.P., 94.9C. at 760 mm. Hg.; V.P., 35 mm. Hg. at 20C.; Visc., 0.50 cps at 20C.; sol. in water, 0.82%; by wt. at 20C.; sol. of water in, 0.60%; by wt. at 20C.; completely miscible at 25C. with acetone, benzene, ethyl ether, heptane, methanol, carbon tetrachloride. Chemical properties: Polymerizes alone, copolymerizes with other ethylenic monomers. In general polyvinyl propionate is more brittle than polyvinyl acetates and are less brittle at low temperatures. Suggested uses: Preparation of specialty rubbers, pressure sensitive adhesives, chewing gum resins, laminating resins, coatings for textiles, metal, and leather. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

VINYL TRIMETHYL NONYL ETHER

M.W., 212.16; Sp.G., 0.8075 at 20/20C.; B.P., 233.5C. at 760 mm. Hg.; V.P., 0.05 mm. Hg. at 20C.; Fr.P., -90C.; sol. in water, less than 0.01% by wt. at 20C.; sol. of water in, 0.14%; by wt. at 20C. Chemical properties: Undergoes additional reactions typical of compounds containing the ethylenic linkage; polymerizes alone or copolymerizes with other ethylenic monomers. Suggested uses: Preparation of polymers and copolymers for use as pressure sensitive adhesives, laminating resins, coating resins, and viscosity-index improvers for hydrodynamic fluids. Pharmaceutical intermediate. Availability: research quantities. Carbide and Carbon Chemicals Co., a Div. of Union Carbide and Carbon Corp.

SPECIALTIES

ACOLIN

This refined tall oil is very much like Acosix in its physical and chemical characteristics, but it has been further processed to improve its odor and color. Fatty Acids, 68%; Rosin Acids, 26%; Unsaponifiable, 6%; Acid Value, 178; Saponification Value, 184; Sp.Gr., 0.945; Color, 4.5 (Hellige); Viscosity, G.H. (Gardner). Suggested uses, see Acosix. Commercially available. Newport Industries, Inc.

ACONON

This refined tall oil has a slightly higher fatty

acid content and lower rosin acid content than either Acolin or Acosix, and has an extremely low unsaponifiable content. Fatty Acids, 72%; Rosin Acids, 25%; Unsaponifiable, 3%; Acid Value, 187; Saponification Value, 191; Sp.Gr., 0.937; Color, 5.6 (Hellige); Viscosity, C.D. (Gardner). Suggested uses, see Acosix. Commercially available. Newport Industries, Inc.

ACOSIX

A refined and distilled tall oil which has a pale color, mild tall oil-like odor, and a low unsaponifiable content. Fatty Acids, 68%; Rosin Acids, 29%; Unsaponifiable, 3%; Acid Value, 188; Saponification Value, 191; Sp.Gr., 0.933; Color, 5.6 (Hellige); Viscosity, C.D. (Gardner). Suggested uses are tall oil esters for adhesives, core oils, binders, linoleum, printing inks, varnishes; tall oil soaps; metallic soaps for tapers, glass oil; sulfated tall oil; sulfated tall oil. Commercially available. Newport Industries, Inc.

ACRYLIC B-82

A colorless acrylic coating polymer, similar to Acrylic B-72, but substantially less expensive. Solids, 40±1%; Solvent, toluol; Viscosity, 200-700 centipoises; Appearance, colorless and clear; Weight per gallon, 8.1 pounds. May be reduced with aromatic solvents, esters, ketones, and chlorinated hydrocarbons; tolerance for aliphatic naphthas is limited; may be pigmented. Performance characteristics: Excellent resistance to discoloration under severe weathering conditions; alkalis, acids, and chemicals; food, cosmetics, and adhesives; both clear and pigmented films. Inert to practically all pigments, including luminescent and fluorescent types. Uses: Specialty coatings, either alone or modified with other film formers, for metal, wood, fabric, plastic sheet, and film. Pigmented it serves as a vehicle for white enamels for kitchen stoves and other products subjected to elevated temperatures. It also as a plasticizer for vinyl resins or nitrilebutadiene and as a vehicle for luminescent or fluorescent pigments. Available in commercial quantities. Rohm & Haas Co.

ACRYLON RUBBERS

Acrylon BA-12 and EA-5 are acrylic rubbers composed of acrylic esters and acrylonitrile. In addition to properties normally associated with acrylic rubbers, such as resistance to heat, hot oils, extreme pressure lubricants, oxygen, ozone, and sunlight, both rubbers have good boiling water resistance. Acrylon BA-12, in particular, possesses excellent stability at low temperatures. These materials find use in such fields as automotive, aircraft, oil, industrial equipment, commercial and home appliances, and the military services, for use as oil, water and coolant seals, O-rings, gaskets, packings, belts, hose, protective coatings, and adhesives. Data sheet. Available in commercial quantities. American Monomer Corp.

ADE-50 COMPOUND

N-alkylbenzyl-N, N-diethyl-N-ethanolammonium chloride, technical grade, 50% solution. A high molecular weight quaternary ammonium germicide and cationic surface active agent. Typical phenol coefficients on the as-is basis at 20C. (F.D.A. Method Bulletin #198) S. aereus 206 and S. typhosa 169. Odorless and non-toxic at use dilution. Useful as a general fungicide, general sanitizer, and deodorant. A superior cationic wetting agent, compatible with nonionic surface active agents in detergent-sanitizer compositions. Available from pilot plant. Oronite Chemical Co.

AGRILON NA

A hydrolyzed polyacrylonitrile sodium salt solution. $(\text{CH}_2\text{CHCOO Na})_n$. Concentration, 15%; pH 7.8; viscosity @ 25C., 5,000 cps. Drawn colored; Sp.Gr., 1.08; Use: soil-conditioner. Available in carloads. American Polymer Corp.

AGRILON P

Sodium salt of a hydrolyzed polyacrylonitrile. White powder, free flowing, 25% active. Use: soil-conditioner. Available in carload quantities. American Polymer Corp.

AGRIMUL PC

A balanced neutral emulsifier for pentachlorophenol. This liquid will mix clear with solvent solutions of pentachlorophenol. The quantity of pentachlorophenol can be varied in the concentration to contain 10%, 20% and as high as 40% pentachlorophenol. The resulting emulsions exhibit excellent shelf life and produce stable emulsions merely by their addition to water with slight agitation. Pentachlorophenol

emulsions are useful in preventing bacterial growth in latex emulsions, as defoliates for cotton, as wood preservatives and in termite and wood micro-organism control. Commercially available. Nopeo Chemical Co.

AMBERLITE IR-45

Weakly basic anion exchanger, shipped in the fully regenerated free base form as uniform, attrition-resistant beads. Density: 42 pounds per cubic foot. Moisture content: 40-50%. Screen grade (wet): 40-50 mesh (U. S. Standard Screens). Effective size: 0.40-0.45 mm. Uniformity coefficient: 1.8 max. Voids: 35-45%. Operable pH range: 0.7. Exchange capacity (as CaCO_3 per cubic foot): 27 kilograms at 3.5 pounds NaOH per cubic foot regeneration level. Characterized by: resistance to acids, bases and solvents; lack of color throw; stability at temperatures as high as 212°F. Uses: with Amberlite anion resins in all types of deionization systems, particularly Monolith. Other applications include: adsorption of acids, exchange of anions, isolation and concentration of pharmaceuticals, disposal of acidic wastes, recovery of metals. Available in commercial quantities. Rohm and Haas Co.

AMBERLITE IR-112

A strongly acidic modified polystyrene nuclear sulfonic acid type cation exchanger with high porosity and intermediate exchange capacity. Shipped in the sodium form as moist, completely swollen beads. Density: 47 pounds per cubic foot. Moisture content: 60-65%. Screen grading (wet): 16-50 mesh (U. S. Standard Screens). Effective size: 0.45-0.5 mm. Uniformity coefficient: 2 max. Vines content (through 50 mesh screen): less than 1%. Voids: 45-50%. Characterized by: high efficiency at low regeneration levels; high resistance to stability at temperatures as high as 250°C. over the entire pH range; resistance to acids, bases, oxidizing and reducing agents, and solvents. Uses: domestic, industrial and municipal water softening; split stream dealkalization, deionization and special applications (e.g., catalysis, decolorization). Available in commercial quantities. Rohm and Haas Co.

AMBERLITE IR-112 (H)—Analytical Grade
Highly refined, chemically pure (C.P.) grade of Amberlite IR-112, supplied in the hydrogen form. Uses: applications include adsorption of organic bases, exchange of complex metallic cations and acid catalysis. Rohm and Haas Co.

AQUASPERSE 1440-36

A casein vehicle designed for the manufacture of latex paints. Excellent pigment wetting and dispersing properties. Casein content 13%. Viscosity 105-110 K.U. pH 8.9. Suggested paint formulations using Aquasperse 1440-36 available. American Resinous Chemicals Corp.

ARCCOS 1044-27A and 1044-27B

These emulsions designed for heat bonding of various combinations of paper, cloth and various films and foils. Film adhesion high. Good excellent crease and water resistance. Provide wide heat seal range, high block resistance and excellent adhesion properties. American Resinous Chemicals Corp.

ARCCO 1044-29A

This solution provides heat seal bonds on a variety of surfaces. Arcco 1044-29A is designed for glassine but also bonds to aluminum and aluminum foil. Heat seals at a range from 225° to 350°. Non-blocking at 120°F., one lb./sq. in./24 hrs. Solvents used do not affect rubber plates. May be applied by conventional coating equipment. Other compounds available. Heat sealing waxed glassine bags, candy bar wraps, etc. American Resinous Chemicals Corp.

ARCCO 1314-28C

A heat seal solution for fabrics. Used by manufacturers of heat seal tapes, edge sealing tapes, rug bindings, labels, etc. Deposits a flexible, tack-free film heat sealable at 300-400°F. Excellent adhesion to cotton, wool, rayon, paper, leather and vinyl plastics. Bonds are resistant to dry cleaning and laundering. Solids 50%. American Resinous Chemicals Corp.

ARCTIC SYNTEX HD

Heavy duty synthetic detergent for industrial cleaning. An alkyl aryl sulfonate detergent built with polyphosphate and silicate alkalies. Physical form, spray-dried beads; color, white; density, 0.34 gm/cc. Exhibits high detergency; unaffected by hard water or metal salts; effective in acid, alkaline or neutral solutions. Uses: laundering (all fabrics); textile scouring (all fibers

and fabrics); rug and upholstery cleaning; industrial cleaning (metal, storage tanks, paper-making felt, etc.); washing laboratory glassware and equipment; windows, floors and wall surfaces; motor vehicles and trains, etc. Commercially available. Colgate Palmolive-Peet Co.

BARALYME CARBON DIOXIDE ABSORBENT

Compressed cylindrical pellets of calcium hydroxide and barium oxychloride in homogeneous mixture. Intended for use in the absorption of carbon dioxide in anesthesia, oxygen therapy, metabolism tests, gas masks and underwater diving units. Pellets are 3/16" in diameter by 5/8" long. Pellets are colored pink with an indicator which changes to blue when the pellets have reached a state of continued inefficient absorption. Commercially available. Thomas A. Edison, Inc.

BASE ML

The synthetic methyl ester of mixed fatty acids, titr. 30°C.; form, clear liquid; color, amber; specific gravity, 0.882; viscosity, 45 S.S.U. at 100°F.; acid value, 4; solubility, soluble in all fatty and petroleum oils. A highly polar and easily emulsified, oiliness additive for way oils, break-oils, rolling oils, water-soluble oils, and cutting oils. Carlisle Chemical Works, Inc.

BENZOYL PEROXIDE CATALYST 35

Contains 35% Benzoyl Peroxide with inert filler. A new, extremely fine, white, free-flowing powder which can be used or handled safely without any special precautions. Specially designed for use in the silicone rubber and plastic industry. May also be used wherever benzoyl peroxide is required and where its color or filler is not objectionable. Commercially available. Cadet Chemical Corp.

CALCOCID LEATHER BROWN G, GD, R

A family of acid dyes designed especially for use on leather. They will produce clear uniform shades ranging from yellow-browns to red-browns on either grain or suede leathers. They work well on either chrome tannage or syntans. They have been applied on kid, calf, side-leather or sheep. Calco Chemical Div., American Cyanamid Co.

CALCODUR RESIN FAST BLUE 2G

A fast-to-light direct blue dye which was developed especially for use under resin finishes. It yields a fairly bright blue with greenish cast. Very little shade change is noticeable after resin treatment, with or without copper and the lightfastness holds up remarkably well. Calco Chemical Div., American Cyanamid Co.

CALCODUR RESIN FAST BLUE 2R

A fast-to-light direct dye which produces a clear red shade blue when applied to cellulosic fabrics. It was developed especially for use under resin treatments. Such treatments cause little or no shade change. The light-fastness of this dye under resin treatments is very good. Calco Chemical Div., American Cyanamid Co.

CALCODUR RESIN FAST ORANGE 5G

A fast-to-light direct dye which produces a bright clear yellowish orange on cellulosic fiber. It was developed especially for use under resin treatments. When so treated there is little or no shade change and but slight change in lightfastness. Calco Chemical Div., American Cyanamid Co.

CALCOFLUOR WHITE MR and 2R CONC.

These products are optical whitening agents designed specifically for laundry soaps and synthetic detergents. Calco Chemical Div., American Cyanamid Co.

CALCO NAPHTHOSOL AS DOUBLE SOLUTION

A solution of Naphthol AS designed especially for use with Calcozoic solutions in the preparation of textile printing mixtures. In addition the solution is convenient to use in normal naphthol dying. Calco Chemical Div., American Cyanamid Co.

CALCO NAPHTHOSOL SWF DOUBLE SOLUTION

A solution of Naphthol AS-SW designed especially for use with Calcozoic solutions in the preparation of textile dyeing and printing mixtures. It is also a convenient form of Naphthol AS-SW to use in most conventional naphthol dyeing procedures. Calco Chemical Div., American Cyanamid Co.

CALCO OIL BLUE N AND ZN

These are oil soluble blues of the anthraquinone type that are characterized by excellent solubility in aromatic hydrocarbon solvents and good solubility in regular petroleum solvents. Calco Chemical Div., American Cyanamid Co.

CALCOPAD PASTES

A line of aqueous dispersions of carefully selected pigments designed especially for padding on fabrics in combination with oil-in-water emulsions of resins. Since the pigments were chosen because of their resistance to light fading, these dispersions are well suited for the producing of pastel shades. These pastes are also compatible with aqueous resins of the urea and melamine-formaldehyde types. Calco Chemical Div., American Cyanamid Co.

CALCO SOLUBLE VAT YELLOW GC

A stabilized leuco vat ester, which when applied to fabrics by dyeing or printing techniques, will produce bright greenish yellow shades. It can be used wherever soluble vat dyes are indicated. Calco Chemical Div., American Cyanamid Co.

CALCOTONE RED 2B PASTE

An aqueous dispersion of an organic red pigment that is especially recommended for the paper trade. A full range of shade from pastel pink to deep reds can be produced when the pigment is added to the beater or applied as a coating. Calco Chemical Div., American Cyanamid Co.

CALCOZOIC BLUE B SINGLE SOLUTION

A solution of the stabilized diazo of Fast Blue B Base which is designed for ready miscibility with Naphtholsols and Naphthosols Solutions. When properly prepared the resultant mixture is suitable for printing cellulosic fabrics. Calco Chemical Div., American Cyanamid Co.

CALCOZOIC RED KB SINGLE SOLUTION

A solution of the stabilized diazo of fast Red KB Base which is designed for ready miscibility with Naphtholsols and Naphthosols Solutions. When properly prepared such mixtures are suitable for printing cellulosic fabrics. Calco Chemical Div., American Cyanamid Co.

COLLOCARB

Collocarb is a combination of 80% of any carbon black and 20% process oil. Collocarb retains the rubber reinforcing characteristics of the carbon black, with greatly improved processing qualities, as a result of internal blending of oil and black at the time of production. Its unique characteristics make Collocarb very desirable for open-mill mixing. Collocarb is supplied in pellet form, in 50 lb. bags or bulk shipments. J. M. Huber Corp.

CYANAMID ALUMINUM STEARATE G-100, G-200, G-300

Three new grades of aluminum stearate for lubricating grease manufacture. These are manufactured from a blend of fatty acids, containing a percentage of dimerized linoleic acid, which gives greases of improved gel stability. Commercially available. American Cyanamid Co.

CYANAMID 1304 ANTI-STATIC AGENT

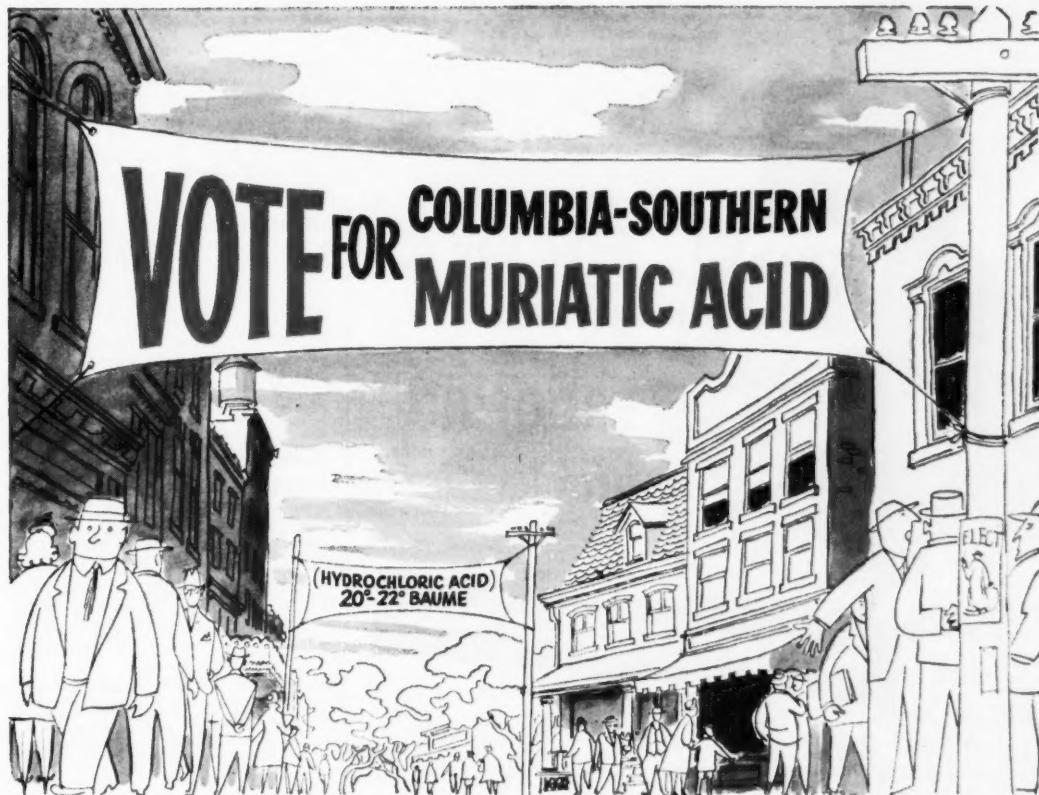
An alkylamido quaternary ammonium complex: clear straw colored liquid at 30°C., solidifying at 5-10°C., active solids approximately 50% pH 7 to 7.5 for a 1% solution; acid and alkali stable; also stable in storage. This product has the property of rendering materials highly anti-static. Commercially available. American Cyanamid Co.

CYFOR

A fortified rosin size giving increased water, ink and lactic acid resistance to papers and boards; gives a higher size test in papers needing an extra "boost" in sizing. The product is shipped at 70% solids. Commercially available. American Cyanamid Co.

DEFOAMER E D

An amber colored liquid containing some suspended particles. An ester type material of coconut fatty acids. Addition of 0.2-1.0% of Defoamer E D by the manufacturer of rubber latex water emulsion paints causes the dissipation of bubbles when paint is applied with a brush or roller. It is also used in other cases for preventing troublesome foaming such as in glues, etc. Commercially available. El Dorado Oil Works.



When you elect Columbia-Southern as your supplier of Muriatic Acid, you get more than a high quality product.

You get the benefit of Columbia-Southern's experience of over half a century as a leader in the production of essential industrial chemicals.

You get the assurance of dealing with a company that has an enviable reputation for quality chemicals, excellent

service, and sound business policies.

You get the appreciation and eagerness of the Columbia-Southern organization. Our sales and service staffs will always go out of their way to help you with your Muriatic Acid problems.

Columbia-Southern means prompt, efficient, courteous attention. We solicit the opportunity to serve you.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY

EXECUTIVE OFFICES: Fifth Avenue at
Bellefield, Pittsburgh 13, Pennsylvania
DISTRICT OFFICES: Boston, Charlotte,
Chicago, Cincinnati, Cleveland,
Dallas, Houston, Minneapolis, New
Orleans, New York, Philadelphia,
Pittsburgh, St. Louis, San Francisco



Soda Ash • Liquid Chlorine • Sodium
Bicarbonate • Calcium Chloride •
Modified Sodas • Pitchlor • Caustic
Potash • Chlorinated Benzenes •
Rubber Pigments (Hi-Sil, Silene EF,
Calcene TM, Calcene NC) • Muri-
atic Acid • Perchloroethylene

COLUMBIA-SOUTHERN

**MURIATIC ACID
is shipped in
8,000 and
10,000 gallon
rubber-lined
tank cars.**

CW Report

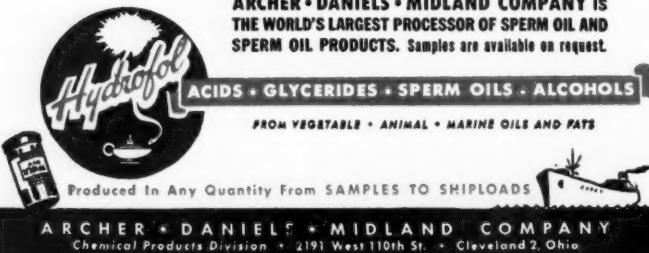


● Sperm Oil is one of nature's best anti-rust materials. Possessing an unusually high film strength, it coats metal surfaces evenly and thoroughly. Furthermore, Sperm Oil tends to penetrate into the pores of metals, giving better protection and a longer protective life. Heat-treated parts that have been quenched in Sperm Oil, for example, can be stored for months without showing signs of rust. Stampings that have been Sperm Oil dipped or sprayed can also be stored for long periods.

Since Sperm Oil has a negligible free fatty acid content, it does not oxidize, harden, or form metallic soaps. As a result, "cementing" of stacked sheet or plate can be prevented by Sperm Oil coating.

If the oil you make is used for slushing, cutting, grinding, quenching, parting, penetrating or lubricating it will pay to investigate the high rust-inhibiting properties of Sperm Oil.

ARCHER • DANIELS • MIDLAND COMPANY IS THE WORLD'S LARGEST PROCESSOR OF SPERM OIL AND SPERM OIL PRODUCTS. Samples are available on request.



DIMER 120

A pale, high melting, permanently fusible resinous material, predominantly dibasic in character, Color N; M.P., 119°C. (Cap. Tube); Acid Value, 145. Soluble in petroleum solvents, drying oils, alcohols, esters, and ethers. Compatible with a wide range of film forming materials. Suggested uses are synthetic resins, paper coatings, spirit varnishes, printing inks. Commercially available. Newport Industries, Inc.

DISPERSANT NI-8586

Liquid nonionic surface active agent. A high molecular weight condensate miscible in all proportions in hard or soft water (except form gels in the 25-80% range) and at all concentrations in mineral spirits, acetone and lower alcohols. Chemically stable in the presence of strong acids and alkalis. Density, 8.75 pounds per gallon at 68°F. Compatible with anionic and cationic surface active agents. A superior wetting agent, useful in the preparation of oil-in-water emulsions. A relatively low foaming detergent with excellent water control detergency, especially when compounded with polyphosphate builders. Compositions can be spray dried or chemically dried if desired. Also useful as a detergency booster in built anionic compositions. Available in limited commercial quantities. Oronite Chemical Co.

DISPERSANT NI-8583

Liquid nonionic surface active agent. A molecular weight condensate miscible in all proportions with common solvents such as mineral spirits, mineral oil, vegetable oils, acetone and alcohol; insoluble in water. Density, 8.43 pounds per gallon at 68°F. An excellent emulsifier for water-in-oil emulsions; capable of suspending large quantities of finely divided solids in solvent media; useful in formulation of dry cleaning "soaps," insecticide emulsions, cosmetic preparations, and similar applications. Available in limited commercial quantities. Oronite Chemical Co.

DU PONT 20% CMU WEED KILLER

An 80% active wettable powder composition based on CMU, 3-(p-chlorophenyl)-1,1-dimethylurea. Technical CMU is a greyish-white crystalline solid, sparingly soluble in polar organic solvents such as acetone and only very slightly soluble in water (230 p.p.m. at 25°C.); low solubility in petroleum oils. Melting range 169.8C-170.4C; after recrystallization from methanol it is obtained as blue rectangular prisms which melt at 170.5C-171.5C. Essentially non-volatile and non-flammable. Acute oral toxicity to rats (LD₅₀): 3.5 g./kg. Commercially available for use as a soil sterilant for long-term control of a wide range of grass and herbaceous weeds on non-crop land, such as petroleum tank farms, railroads and manufacturing plant sites. E. I. du Pont de Nemours and Co., Inc., Grasselli Chemicals Dept.

DU PONT MANZATE FUNGICIDE

A 70% active wettable powder formulation containing manganese ethylenedithiocarbamate. The technical product is a light-tan colored solid which is slightly soluble in water and insoluble in most common organic solvents. Acute oral toxicity (LD₅₀) to rats: 7.5 g./kg. body weight. Commercially available for control of principal foliage and fruit fungus diseases of tomato and for early blight and late blight of potato. E. I. du Pont de Nemours and Co., Grasselli Chemicals Dept.

DURAPLEX C-58

A phthalic alkyd coating resin, primarily for metal decorating. Solids, 60% ± 1%; solvent, mineral thinner. Viscosity, 40% (diluted mineral spirits). Gardner 100% viscosity, as supplied (Gardner, Zet-1). Acid number (solids), 10 max.; Color (Gardner), 7 max; Phthalic anhydride (solids), 32%; Type oil, soyab; weight per gallon, 7.9 pounds. Performance characteristics: Excellent flow and leveling, hot slip, gloss and gloss retention, color and color retention, air drying and baking speed, fabricating properties, resistance to weathering. Good compatibility with varnishes, oils, alkyds, brush lacquers, etc. to alkalis and chemicals. Uses: For sprayed or brushed, air-dried or baked architectural enamels, trade-sales coatings and farm-implement paints. Available in commercial quantities. Rohm and Haas Co.

DUTCH BOY BENTONE BLUE*

New organic compound of mon-morillonite. Useful as Blue pigment. Gives a reddish undertone when used as a blue colorant in vinyls and other resins for film and sheeting compounds.

Predispersed paste for easy incorporation, resists staining and bleeding, very stable to heat and light. Available for experimental investigation. National Lead Co.

ELDOBASE

A mixture compounded from glycerine, coconut fatty acid esters, lanolin and other ingredients to form a base for the preparation of lotions and creams. Eldobase is a solid melting around 45°C. In the molten condition it is easily emulsified with water in various proportions to give a liquid, cream or paste. Commercially available. El Dorado Oil Works.

EMULSIFIER BASE

A concentrated aromatic low cost emulsifier; forms "self emulsifying solvents" with orthodichlorbenzene, kerosene, gasoline, xylol, naphthas, mineral oil and similar hydrocarbons and chlorinated hydrocarbons. 10% Solvent Solution clear, 10% water solution clear, Flash 190°F., pH 10.6. Commercially available. The Curran Corp.

EXPERIMENTAL DETERGENT 9X123

An alkali stable non-ionic wetting agent and detergent, classified as an alkyl benzyl polyethylene glycol ether. Designed for use with strong alkalies such as caustic soda. pH of 1% solution, 5.0-8.0. Available in developmental quantities. Rohm and Haas Co.

FLAKED METALLIC LEAD

A bronze powder type of metallic lead, containing less than 1% stearic acid and stearates. Special formulations show the coatings resist chemical corrosion conditions. Samples on request. Metalead Products Corp.

FLEXOL[®] PLASTICIZER CC-55

$\text{C}_6\text{H}_5\text{COOCH}_2\text{CH}(\text{C}_2\text{H}_5)\text{CH}_2\text{Cl}$; M.W., 397.59; Sp.G., 0.5886 at 20/20°C.; B.P., 216°C. at 5 mm. Hg.; Vapor pressure, 2.2 mm. Hg. at 20°C.; Visc., 42.1 cps. at 20°C.; Pour point, -53°C.; Flash point (Cleveland open cup), 425°F.; Coefficient of expansion, 0.00077 per + C. at 20°C.; Insol in water at 20°C.; Sol. of water in, 0.3% by wt. at 20°C.; Power factor, 2% at 25°C.; D.C.R., 1 x 10⁶ megohms at 25°C.; "P" value¹¹ 100. Plasticizer CC-55 is a primary plasticizer for vinyl chloride resins. It is used to produce calendered and extruded products as well as plastics having low viscosities. Suggested uses: In garden hose, handbag and upholstery sheeting, slush molded dolls and toys, electrical insulation, and general-purpose vinyl film. Availability: commercial quantities. Carbide and Carbon Chemicals Co., Division of Union Carbide and Carbon Corp.

FLO-KLEAR

A concentrated, homogeneous mixture of liquid non-ionic detergents. Product is an amber colored liquid having a flash point of not less than 300°F. It is completely miscible with all dry cleaning solvents—both petroleum and synthetic. Uses: As a dry cleaning detergent in either petroleum solvent or synthetic solvent dry cleaning systems at a constant concentration of 1/2 of 1% to 3% for the removal and suspension of soil from the fabrics. Commercially available. Pennsylvania Salt Manufacturing Co.

GELVA EMULSION 5-56

This is Shawinigan's new emulsion developed for quick-tack adhesives. Maximum particle size is two to three microns. It is specially recommended for high speed work where quick-tack is essential. Shawinigan Products Corp.

GELVA EMULSION TS-60

A high solids polyvinyl acetate emulsion giving superior film properties. Properties: 56% solids, pH 4.6, emulsion viscosity 850 cps. Brookfield No. 3 at 30 RPM, 1480 cps. Scott Cup. Gives a continuous film. Film demonstrates excellent adhesiveness in 1% w/w solution in Gardner Waehnfeld Test. Particle size about one micron. Heat-set temperature of film 170-180°F. Uses: Adhesive, emulsion paint base, textile size and binder. Availability: pilot-plant quantities. Shawinigan Products Corp.

HYDROXYETHYL STARCH

A white, fine particle solid that is readily soluble in cold water. Viscosity of a 5% aqueous solution, 1500-2500 cps. at 20°C. Suggested uses: non-staining adhesive, protein colloid, thickener and stabilizer for textiles and paper. Availability: development quantities from pilot plant. Carbide and Carbon Chemicals, Div. of Union Carbide and Carbon Corp.

* Trade-mark

HYPONATE L-50

M.W., 415. An alkyl aryl oil soluble petroleum sulfonate; oil-free, neutral, salt free. It has the following typical composition: sulfonate, 52.0%; water, 47.5%; oil, 0.5%; inorganic salt, none. Suggested uses: As an emulsifier and/or emulsion stabilizer in the emulsification and emulsion polymerization of styrene, vinyl chloride, etc. as a fat splitting catalyst as an emulsifier in those emulsion systems where mineral oil present in the emulsifier would be a disadvantage and an oil free petroleum sulfonates is indicated. Availability: commercial quantities. L. Sonnen Sons, Inc.

ISOSTYRE

Styrenated dehydrated castor oil with no styrene odor. For rapid drying hard protective coatings of exceptional water alcohol and alkali resistance with outstanding adhesion, gloss and color retention, good can stability. Suggested uses: Pigmented films for outside and inside use; clear films for sealers, metal protection. Supplied in mineral spirits of K.B.49 at 70% solids, viscosity Z-27; at 50% solids, viscosity M-P; acid No. 100% solids, 6 maximum; Color, 5 maximum at 50% solids. Commercially available. Woburn Chemical Corp.

KATHON L-4

Low volatile herbicide. Tetra hydro furfuryl ester of 2,4-D acid. Contains 4 lbs. of 2,4-D acid equivalent per gallon. Used especially for brush control in areas where sensitive crops are grown. Mixes readily with oil or water. Available commercially in 1, 5 and 50 gal. containers. Rohm and Haas Co.

KEL-F HIGH TEMPERATURE THERMO-PLASTIC

High polymer of trifluorochloroethylene. Kel-F is supplied in the form of plasticized and unplasticized molding powders which may be easily fabricated on conventional machines by injection, compression, transfer and extrusion molding techniques. Kel-F is chemically inert; possesses low cold flow; can be used over a temperature range of 710°F. from -320°F. to +390°F.; has outstanding electrical properties; zero moisture absorption; is readily colored; possesses excellent clarity in thin sections. The M. W. Kellogg Co.

KEL-F OILS, GREASES AND WAXES

Low molecular weight trifluorochloroethylene. A series of compounds ranging from light oils to waxes with pour points from -35°F. to +135°F. having boiling points from 230°F. to 446°F. and higher. The oils, greases and waxes can be blended to any desired intermediate viscosity; can be used at very low temperatures and as high as 450°F.; have similar electrical properties to those of the Kel-F high polymers; are highly resistant to action of corrosive chemical agents; may also be used for lubricating purposes and plasticizers. The M. W. Kellogg Co.

KESSCO 40

A self-emulsifying grade of glyceryl monostearate. Anionic, cream-colored, wax; M.P., 58-60°C. Stable to light, heat and oxidation. Recommended for cleaning, vanishing and cold cream, hand and hair formations. Suitable for g/w and w/o emulsion. Also an effective stabilizer for fluid emulsions. Commercially available. Kessler Chemical Co., Inc.

KESSCOFLEX 103

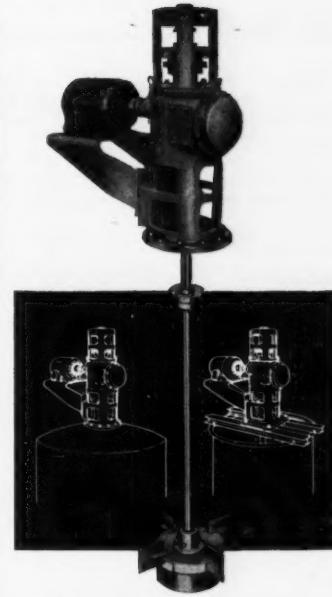
Plasticizer. Compatible with polyvinyl chloride, copolymers, cellulose acetate ethyl cellulose and synthetic rubbers. Outstanding properties are low temperature performance, low volatility and plasticizing efficiency. Imparts good hand and drape to vinyl films. Potentially of value in preparation of viscosity-stable plastols and organosols. Commercially available. Kessler Chemical Co., Inc.

KESSCOMIR

Water-white, light viscosity oil; faint odor; acid 0.5% max.; Sp.Gr., 0.850; F.P. 0 to -7°C.; insoluble in water. Outstanding emollient for cosmetic and pharmaceutical preparations; solvent for G-II. Softener and lubricant for lipsticks, rouge and cream powders. Commercially available. Kessler Chemical Co., Inc.

LUPOSEC

This product is a mixture of wax and acetate of alumina and is used for water-proofing in the textile industry. A liquid, commercially available; usually shipped in barrels or drums. Jacques Wolf and Co.



"Lightnin' Mixers... fit open or closed tanks... easily interchanged any time

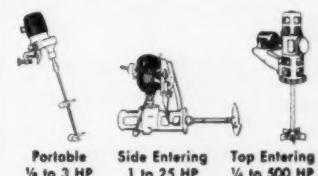
LIGHTNIN Mixers cost no more than ordinary mixers, and give you extra protection to meet changes in your fluid agitation requirements.

The standard mixer shown above can be changed from closed-tank to open-tank mounting and vice versa at any time.

SPEEDS ARE INTERCHANGEABLE, TOO. Any of 16 standard mixing speeds can be had in a few minutes, without dismantling the mixer or taking it off the tank.

GET FULLY GUARANTEED RESULTS and save at least half your engineering cost, by calling us in on any processing problem involving fluid agitation.

NEW ILLUSTRATED BOOKLET shows in an interesting, nontechnical way how we help you get the results you want. Ask for Bulletin B-501. Also request catalog information on LIGHTNIN Mixers.



MIXCO[®] fluid mixing specialists

MIXING EQUIPMENT Co., Inc.
149 Mt. Read Blvd., Rochester 11, N.Y.
In Canada: Willing & Greer, Ltd., Montreal

LUSTREX F

A thermoplastic molding powder in granular form having exceptionally good dimensional stability and toughness, relatively low water absorption, excellent electrical properties, good chemical resistance, superior heat resistance and abrasion resistance. Suitable for wide range of applications. Can be readily fabricated on standard injection, compression and extrusion machines, employing general techniques used with thermoplastic materials. Suggested uses: Gear applications, housings, valve seating materials, battery cases. Available in pilot-plant quantities. Monsanto Chemical Co., Plastics Div.

MERLON

Modified Polyvinyl resin in solid form. Soluble in aqueous alkaline solution including ammonium hydroxide. Uses recommended: finishing of textile fabrics like cotton, rayon, and blends to produce a durable, stiffened effect. Availability: commercial quantities. Monsanto Chemical Co., Merrimac Div.

METACHROME BLUE SU

A new chrome blue for wool. Dyes wool by all three chrome methods. Exceptionally fast to light. Commercially available. Poughkeepsie Dye-stuff Corp.

METACHROME RED F CONC.

A new chrome red for wool. Dyes wool by all three chrome methods. Exceptionally fast to light. Commercially available. Poughkeepsie Dye-stuff Corp.

MIST

A general spot removing compound containing specially blended nonionic surfactants. This dry cleaning spotter is an optically bright, nonviscous liquid of light amber to straw color having practically no odor. Uses: By the dry cleaner for the safe and efficient removal of food stains, ink and dye stains when used in its concentrated form and for the removal of blood stains when used with ammonia. Commercially available. Pennsylvania Salt Manufacturing Co.

MONOPLEX 5-38

Low cost primary monomeric plasticizer of high molecular weight for vinyl compounds. Appearance, clear, dark; Acid number (mgm. KOH/gm.), 5.0 max.; Viscosity (Gardner, K-W); Specific gravity (25°C./15°C.) 0.9396; Flash point, 530°F. Performance characteristics: compatible with a wide range of materials; efficient, displays satisfactory processing attributes and good resistance to organic solvents. Uses: pocket-book stocks, electrical jacketing, tubing flooring, extruded moldings, and welding. Available in commercial quantities. Rohm and Haas Co.

MONOPLEX 5-71

Moderately priced monomeric plasticizer-stabilizer for vinyl compounds. Appearance, clear; Color (Varnish scale), 1; Acid number (mgm. KOH/gm.), 0.1; Viscosity (25°C.), 14.2 centipoises; Flash point: 395°F. Specific gravity (25°C.), 0.901. Performance characteristics: Imparts excellent flexibility at low temperatures, has good plasticizing efficiency and contributes very significantly to stabilization toward heat and light. Compatible with many other plasticizers. Except where plasticizer concentration is low, should be used in blends. Uses: vinyl upholstery, sheeting, coated fabric, light weight film, garden hose, electrical jacketing, dispersion compounds for casting and slush molding, injection molding and semidilute formulations. Available in commercial quantities. Rohm and Haas Co.

MORFLEX 120-DICAPRYL PHthalate

A new Di-Capryl Phthalate characterized by low odor and color; for plasticizing vinyl and other synthetic resins. Commercially available. Morton-Withers Chemical Co.

MORFLEX 330-DIDECYL ADIPATE

A new low temperature plasticizer for vinyl and other synthetic resins; characterized by both low temperature flex and low volatility providing qualities comparable to Di-Octyl Sebacate at much lower cost. Color 50 ACPA maximum; acid (as acetic) .01% maximum. Commercially available. Morton-Withers Chemical Co.

MORFLEX 130-DIDECYL PHthalate

A new vinyl plasticizer characterized by extremely low volatility, providing dimensional

stability to such products as vinyl floor and wall coverings. Color 50 ACPA maximum; acid (as acetic) .01% maximum. Commercially available. Morton-Withers Chemical Co.

MORFLEX 175-OCTYLDECYL PHthalate

An octyl-decyl phthalate plasticizer made from newly available alcohols; color 50 ACPA maximum; acid (as acetic) .01% maximum; for use in plasticizing vinyl and other synthetic resins; characterized by low volatility and odor; better hand to film and sheeting and excellent electrical properties. Commercially available. Morton-Withers Chemical Co.

NEOPRENE TYPE WRT

An improved general-purpose neoprene characterized by very low compression-set, outstanding heat resistance and reduced tendency toward crystallization at moderately low temperatures as compared to older types of neoprene. Other properties are similar to older types of neoprene. Commercially available. E. I. du Pont de Nemours and Co., Organic Chemicals Dept.

NOPCO SIZE VN

A Terpene Phenolic resin produced from alpha pinene. Color, X-WG; M.P., 86°C. (Cap. Tube), 118°C. (B&R.); Sp. Gr., 1.03; Soluble all proportions in toluol, acetone, butanol, ethyl acetate, turpentine, mineral spirits, V.M. & P., naphtha, linseed oil, tung oil, soybean oil, dehydrated castor oil. Compatible with a variety of resins and vinyls. Suggested uses: In adhesives, naphtha type paper coatings, extender for vinyl resins in coatings. Commercially available. Newport Industries, Inc.

NOPCO SIZE 5 RESIN

A neutral terpene phenolic resin produced from alpha pinene. Color, X-WG; M.P., 86°C. (Cap. Tube), 105°C. (B&R.); Sp. Gr., 1.03; Soluble all proportions in toluol, acetone, butanol, ethyl acetate, turpentine, mineral spirits, V.M. & P., naphtha, linseed oil, tung oil, soybean oil, dehydrated castor oil. May be used in liquid and paste type wax polishes as an extender for Carnauba and other waxes. Commercially available. Newport Industries, Inc.

NOPCO SIZE 5-86 RESIN

A neutral terpene phenolic resin produced from alpha pinene. Color, X-WG; M.P., 86°C. (Cap. Tube), 117°C. (B&R.); Sp. Gr., 1.05; Soluble all proportions in toluol, acetone, butanol, ethyl acetate, turpentine, mineral spirits, V.M. & P., naphtha, linseed oil, tung oil, soybean oil, dehydrated castor oil. Compatible with a variety of resins, vinyls, and zein. Suggested uses are adhesives, alchohol-type paper coatings, extender for vinyl resins in coatings, shellac substitutes, and aniline dyes. Commercially available. Newport Industries, Inc.

NOPCO SIZE V-40 RESIN

A terpene phenolic resin produced from alpha pinene. Color, X-WG; M.P., 98°C. (Cap. Tube), 117°C. (B&R.); Sp. Gr., 1.05; Soluble all proportions in toluol, acetone, butanol, ethyl acetate, turpentine, mineral spirits, V.M. & P., naphtha, linseed oil, tung oil, soybean oil, dehydrated castor oil. May be used in liquid and paste type wax polishes as an extender for Carnauba and other waxes. Commercially available. Newport Industries, Inc.

NILOX

A pale, disproportionalized resin which exhibits excellent resistance to oxidation. Color, WW-WW; M.P., 62°C. (Cap. Tube); 85°C. (B&R.); Acid Value, -162; Saponification Value, 163.5. Suggested uses are rubber adhesives, emulsifier in cold rubber processing. Commercially available. Newport Industries, Inc.

NINEX 21

A foam-stabilized liquid detergent concentrate containing 60% active material. Besides excellent sudsing power, Ninex 21 exhibits high viscosity on dilution and is not rusting in steel containers. Recommended for dishwashing, car washing, bubble baths, etc. Ninol Laboratories.

NINOL AA62

A nonionic alkylamide-type detergent possessing excellent foam-strengthening and stabilizing properties for alkyl aryl sulfonates or alcohol sulfates. Also exhibits unusually high viscosity in aqueous solution. Ninol Laboratories.

NOBS NO. 1

A vulcanization accelerator for rubber having delayed action characteristics. A selected blend of N-Oxydiethylene benzothiazole-2-sulfenamide and benzothiazyl disulfide. Specific gravity 1.39; Softens at 70-72°C.; Viscosity, strong; characteristics, sweet odor. Suggested applications: In both natural and synthetic rubber, especially in conjunction with high abrasion furnace blacks. Available in commercial quantities. Calco Chemical Div., American Cyanamid Co.

NOPCOGEN C-5

A polyoxyethylene fatty amido alcohol. Soluble in water; in 50% sulfuric acid; in 10% sodium

hydroxide; and in many inorganic salt solutions. Activity, 100%; color, dark brown liquid. Exhibits surface tension reduction properties in very small concentrations. Suggested uses: Rayon spin bath additive. Utilized at a concentration of less than 100 parts per million will effectively eliminate deposition of craters on face of the spinnerette. Will also eliminate crystallization of inorganic salts from spin bath and facilitate filtration of the spin bath to remove agglomerated insoluble matter. Also suggested for use in many industrial processes where elimination of borderline salt crystallizations are bothersome; where slow filtration rates can be speeded by coagulation of fines and colloidal particles; where surface tension reduction is required in acid, alkaline or inorganic salt solutions. This reduction of surface tension will significantly increase the rate of drainage of solution from surfaces. In the forming processes, such as metal pickling, the bubbles break quickly without creating a disagreeable spray or mist. Commercially available. Nopco Chemical Co.

NOPCO SIZE VN

Polyvinyl acetate emulsion having the following chemical and physical properties: solids 55% minimum; pH 3.5-4.5; particle size 1.2 microns average; emulsion type nonionic; specific gravity 1.042; viscosity 800-1000 cps. Brookfield. Nopcosize VN produces a clearer, more flexible film having greater tensile resistance than the conventional polyvinyl acetate emulsions. Coupled with this greater flexibility is a heat sealing temperature about 10-15°C. lower than ordinary making unnecessary, in many instances, the use of added plasticizer. The lower tack point has been produced by internal plasticization thereby eliminating the possibility of plasticized migration. If lower tack point is desirable, the emulsion tolerates the addition up to 30% dibutyl phthalate, the *as is* basis. This emulsion can be used alone or compounded with other resins, starches, clays, plasticizers and thickeners as the individual problem requires. Adhesives can be prepared which are suitable in packaging and lamination involving aluminum, cellulose and plastic sheeting, luggage and related leather goods, heat seal labeling, padding, bookbinding and wood fabrication. Commercially available. Nopco Chemical Co.

PAPER PRODUCT 2219

A non-ionic surface active agent specifically designed for use as a de-sizing agent for paper as well as napkins, facial tissues, etc. Developed for slush stock addition. It is a brown liquid, 100% active ingredients; soluble in warm water up to 25%. Commercially available. American Cyanamid Co.

PAPER PRODUCT 2220-A

A non-ionic surface active agent for use as a de-sizing or re-wetting agent in paper towels and other absorbent type papers. It is a brown liquid, 80% active ingredients; complete solubility in warm water. Commercially available. American Cyanamid Co.

PAPER PRODUCT 2262

A surface active agent for surface application to control absorbency and re-wetting characteristics in saturating papers, towelling and napkin grades, wet-strength window wiping tissue, etc. It is amber-colored liquid, 50% active ingredients, infinitely soluble in water. Commercially available. American Cyanamid Co.

PAPER PRODUCT 2287

A synthetic sizing agent giving high water, alkali and lactic acid resistance to paper sized at alkaline or acid pH. Designed for slush stock addition or surface application. It is a light brown solid flaked material, 100% active. Trial quantities available. American Cyanamid Co.

PAREZ RESIN 614

A cationic urea formaldehyde wet strength resin of high efficiency. It is a light yellow, clear, pourable syrup, stable for at least three months at 90°F. or lower; miscible in all proportions with water. Commercially available. American Cyanamid Co.

PENCO DE-FOL-ATE

A chlorate-type cotton defoliant based on magnesium chloride as the active ingredient and containing a fire-suppressant designed for application to mature cotton plants as an aqueous spray. It is readily soluble in water, very hygroscopic, and contains no boron. Penco De-Fol-At is usually applied at the rate of ten pounds of product in ten gallons of water per acre. Commercially available. Pennsylvania Salt Manufacturing Co.

It's time we got *working* mad!



As we listen to the latest insults from Moscow, we're likely to get fighting mad.

Instead, we'd better use our heads and get *working* mad.

It is clear by now that Stalin and his gang respect just one thing—strength. Behind the Iron Curtain they've been building a huge fighting machine while we were reducing ours. Now we must rebuild our defenses—*fast*.

As things stand today, there is just *one* way to prevent World War III. That is to re-arm—to become strong—and to stay that way!

This calls for better productivity all along the line. Not just in making guns, tanks and planes, but in turning out civilian goods, too.

Arms must come first. But we must produce arms *at the same time* we produce civilian goods.

We can do this double job if we all work together to turn out more for every hour we work—if we use our ingenuity to step up productivity.

All of us must now make sacrifices for the common good. But we're working for the biggest reward of all—*peace with freedom!*

THE BETTER WE PRODUCE THE STRONGER WE GROW



FOR A FREE COPY OF "THE MIRACLE OF AMERICA"

MAIL THE COUPON to Public Policy Committee, The Advertising Council, Inc., Dept. B.P., 25 West 45th Street, New York 19, N. Y.

Name _____

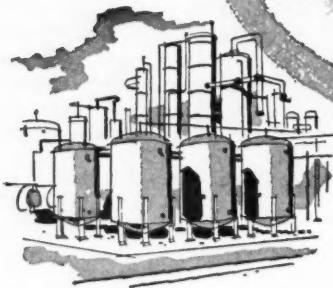
Address _____



did you know...about **Carbide's**

POLYETHYLENE GLYCOLS'

Versatility? Quality? Availability?



Carbide and Carbon's experience in the production of polyethylene glycols assures you that these products meet rigid quality controls and guaranteed high quality. These polyethylene glycols are available for immediate shipment in four closely controlled molecular weight ranges—200, 300, 400, and 600. Solid polyethylene glycols with molecular weights of 1000-6000 are marketed as CARBOWAX Compounds.

These water-white, non-volatile liquids are *truly* versatile chemicals. They are humectants, solvents, and lubricants and yet are completely soluble in water. These products are heat-stable, inert to many chemical agents, and do not hydrolyze or deteriorate on standing. They are powerful solvents for dyes, drugs, resins, proteins, and other difficultly soluble materials, and leave no residual odor in end products. The polyethylene glycols are much less volatile than glycerol and are 40 to 70 per cent as hygroscopic. Within that range you can get any humectancy you need. In addition, the two hydroxyl groups can be esterified with organic acids. The diesters of fatty acids form plasticizers with good low-temperature properties and the monoesters form excellent surface-active agents that are not affected by mild acids or hard water.

IT'S EASY to see how these polyethylene glycols can serve you. Try them in your manufacturing process wherever polyols such as glycerol are used. Just call or write our nearest office for trial samples and additional technical help.

COUNT THE WAYS THEY CAN HELP YOU AS... 

Humectants

Lubricants

Solvents

Couplers

Intermediates
for:

Non-Ionic Surface-Active Agents
Suspending Agents
Thickening Agents
Foam Stabilizers
Plasticizers

CARBIDE AND CARBON CHEMICALS COMPANY

A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street  New York 17, N. Y.

Offices in Principal Cities
In Canada:
Carbide and Carbon Chemicals, Limited, Toronto

The term "Carbowax" is a registered trade-mark of Union Carbide and Carbon Corporation.

PENNPAINT 229

A chlorinated aliphatic hydrocarbon base coating for protection against corrosion. Product applies at 3 to 4 mils thickness per coat with brush or spray application. Uses: Protection of metal and machinery against corrosion. Coating was especially developed for use in the company's chemical plants and is now offered to all industries handling corrosive materials. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT EC-5

A soap based emulsifying agent formulated to give compatibility with water and with petroleum solvents. Contains special rust inhibiting agent. For use this product is extended with up to ten volumes of petroleum solvent and the resulting mix emulsified with up to 100 volumes of water. Steel parts cleaned in this emulsion are protected against in-plant rusting for 1 to 4 weeks. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT EC-51

A solvent emulsion cleaner based on Pennsalt EC-5 extended with a special blend petroleum solvent of the kerosene range. Product is emulsified in up to 100 volumes of water to provide cleaning action and rust inhibition in spray washing applications. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT EC-54

A solvent emulsion consisting of a high flash, high boiling solvent blend plus a rust inhibiting emulsifier. It has a flash point of 260°F, fire point 300°F, and 95% boils off within the range of 490 to 620°F. For use in spray washing applications where an emulsion cleaner must be used at high temperatures with no boil-off of solvent and no undue fire hazard. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT ENDOTHAL

Endothal is disodium 3,6-endoxohexahydrophthalate and is formulated into several different types of agricultural and specialty products. Pennsalt Endothal Defoliant S-4069 is being offered for sale commercially for cotton defoliation in limited areas. Other formulations have given considerable promise as a pre- and post-emergence herbicide in certain crops and as a crop protection agent. Wide scale experimental work on many of these uses is being continued in the field this season. Pennsylvania Salt Manufacturing Co.

PENNPSALT FURANE CEMENT

A cold-hardening, poly furfural-alcohol type resin cement. Product is sold as a liquid and a powder which are mixed to a smooth mortar. Mortar sets up to form dense, hard, joints which exhibit excellent resistance to alkalies, solvents, greases and most acids, at temperatures up to 400°F. Uses: For joining all types of acid-proof brick and tile construction, including pickling tanks, floors, walls, drains, etc. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT PB-1

An alkaline product compounded with petroleum based foam deprimers and special organic dispersing agents. Used at 10% to 15% in water curtain type paint spray booths to float paint and keep booth parts clean. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT PENTRETE

A liquid seed disinfectant for treating wheat, barley, oat, and flax seeds. The active ingredient is a phenyl mercuric ammonium complex which is a soluble salt of very low vapor pressure. This product is designed for use in slurry seed treating machines and controls seed-borne diseases such as smut, bunt, and damping-off and protects the seedlings from soil-borne organisms that cause seed decay and seedling blight. The liquid mercurial formulation is simpler and safer to use than dry dusts and provides better, more uniform coverage. Commercially available. Pennsylvania Salt Manufacturing Co.

PENNPSALT SC-25

A controlled blend of surface active agents, soaps and other materials in an aliphatic naphtha, balanced to make possible the solution of otherwise insoluble substances. This liquid cleaner is clear, light brown with practically no odor, having a flash point above 190°F. Uses: For removal of grease, oil and other soils espe-

cially from confined places such as diesel locomotive engine rooms, ship's bilges, etc. Commercially available. Pennsylvania Salt Manufacturing Co.

PENSUDS

A mildly built, synthetic base Wet Cleaning detergent. This detergent is a dry white to tan granular material designed to give maximum detergent action in either hand or water. Uses: In dry cleaning plants for Wet Cleaning both fugitive and non-fugitive garments by hand or in the washwheel. Commercially available. Pennsylvania Salt Manufacturing Co.

PENTHON

Formulations of O, O-dimethyl dithiophosphate of diethyl mercaptosuccinate which has been shown by extensive field testing to be one of the safest and most effective of the new chemicals for control of mites and aphids on various fruits and other crops. Penthon E-50 is a 50% emulsifiable concentrate containing five pounds of actual active ingredients per gallon. Penthon W-25 is a wettable powder containing 25% active ingredient designed for use as a water suspension or for the preparation of more dilute finished dust formulations. Commercially available. Pennsylvania Salt Manufacturing Co.

PETROLEUM SULFONATES, SYNTHESIZED

Highly refined, light colored, oil-soluble sulfonates, of greater than normal activity due to the presence of combined SO₄ in greater than mono-sulfonated compounds. Mol. weights: 300, 400, 475, 600, and 700; color: NPA free. Uses: Suggested uses: base for lube-oil additives, rust and corrosion inhibitor, cutting and metal working oils, soluble oils, dry cleaning soaps, detergents and as fat splitting agents. Availability: tank car quantities. Morton-Witers Chemical Co.

POLYCO 446

An internally plasticized vinyl chloride copolymer dispersion in water. Solids 45%, pH 4 to 5, viscosity 10 to 20 cps @ 25°C. Forms clear, transparent films on drying at ordinary temperatures. Uses: coating and saturant for leather, paper, textiles. Available in commercial quantities. American Polymer Corp.

POLYCO 447

Polyvinyl acetate copolymer dispersion. Solids 61% Viscosity 3,000 cps. @ 25°C, pH 6 to 7. Uses: additive for starch, dextrose, and tapioca adhesives. Available in commercial quantities. American Polymer Corp.

POLYCO 468

Polyvinyl acetate copolymerized in ethanol-ethyl acetate solvent. Solids 55%. Uses: Non-blocking, high gloss, scuff-resistant coatings. Available in commercial quantities. American Polymer Corp.

POLYCO 470

A 55% polyvinyl acetate copolymer water dispersion. pH 4 to 5. Viscosity 1200 cps @ 25°C. Use: additive for Portland Cement, plaster, etc., to impart self-curing properties, increase tensile strength, resilience. Commercially available. American Polymer Corp.

POLYCO 476

Internally plasticized polyvinyl chloride dispersion in water. Solids 45%; pH 4 to 5. Viscosity 10 to 20 cps @ 25°C. Forms clear, transparent films. Uses: coating for paper, leather, textiles. American Polymer Corp.

POLYCO 479

A plasticized polystyrene in aqueous dispersion. Solids 45%; pH 8.5 to 9.5; viscosity @ 25°C, 10 to 100 cps. Use: latex paint binder. Available in commercial quantities. American Polymer Corp.

POLYCO 482

Aqueous dispersion of a polystyrene having very fine particles. Solids 40%; pH 4 to 6. Viscosity @ 25°C, 10 to 25 cps. Use: Floor-wax additive for imparting scuff-resistance and anti-slip properties. Available in commercial quantities. American Polymer Corp.

POLYCO 1360-29

Polyvinyl acetate copolymer dispersion adhesive. pH 6.5. Viscosity 2500 cps @ 25°C. Use: All purpose adhesive. Freeze-resistant. Available in commercial quantities. American Polymer Corp.

POLYESTER RESINS PDL 7-669-679-680

Three new resins that withstand prolonged temperatures up to 500 degrees F. without loss of strength. PDL 7-669 is a general purpose resin; PDL 7-680 is a fire resistant (self extinguishing) resin containing aluminum trioxide; and PDL 7-679 is a crystalline resin for impregnating metal or cloth. These resins, reinforced with glass cloth, will give flexural strength values during exposure at 500°F. of from 30,000 to 35,000 pounds per square inch. These resins are expected to find application in heat-resistant airplane parts, durable ovenware for bakeries and the home, etc. American Cyanamid Co.

REZYL 405-18

An oil-modified alkyl resin for incorporation in paints. It can be used to produce flat finishes on a wide variety of surfaces—from enamel to wall paper—without showing differences in color or gloss. Makes paints easier to brush, quicker drying, and higher in scrub-resistance. American Cyanamid Co.

RHONITE R-2

Aqueous solution of a thermosetting resin for textile finishing. Solids content: High. Specific gravity: 1.21. pH: essentially neutral. Viscosity (Gardner): F.I. Appearance: colorless, clear. Performance characteristics: easily handled, stable without refrigeration, durable to washing. Uses: for dimensional stabilization of viscose rayon fabrics, embossed and glazed finishes on cotton, spring finishes on nylon and silk, embossing of nylon fabrics, stiffening nylon and acetate fabrics, reducing thread slippage of synthetic fabrics. Available in commercial quantities. Rohm and Haas Co.

SOVASTYRE

Styreneated soybean oil with no styrene odor. For quick drying protective coatings with good water and alkali resistance and good adhesion, gloss and color retention. Suggested uses: Pigmented films for outside and inside use; clear films for sealers, metal lacquers, etc. Solids content: 70% with minimal solvents K.B.37. Viscosity, Z3.73; color: 12 Maximum; acid No. 100% solids-8 Maximum. Commercially available. Woburn Chemical Corp.

STABILIZER 6162 DOP

A non volatile, light yellow, viscous liquid having a density of 1.07. Insoluble in water, but miscible in all proportions with common organic solvents. Similar to DOP (diethyl phthalate) in compatibility. Suggested uses: Combines light stabilizing and plasticizing action for vinyl resins. Particularly interesting for plastics. Availability: Samples and pilot-plant quantities. Victor Chemical Works.

STARANILIDE, EMERY A-805-R

Staranilide is a hard, relatively high-melting wax-like material with essentially no odor. Melting point, 80-82°C; Hardness (Shore Durometer 13), 60-70; Solid Color, Light Tan; Acid Value, 2-4; Flash Point, 480°F. Fire Point, 535°F. Because of its wax-like character, and compatibility with other waxes, staranilide promises as a wax or wax extender for polishes, carbon paper, paper coatings, textile auxiliaries, etc. Availability: experimental quantities. Emery Industries, Inc.

STEARONE, EMERY C-846-R

A crystalline solid with practically no odor or taste. M. P. 74-76.5°C; Color, light straw; Acid Value, 2; Flash Point, 510°F; Fire Point, 565°F. Emery Stearone is a hard, relatively high-melting, wax-like product derived from commercial stearic acid. Since the latter is actually a mixture of stearic and palmitic acids, Stearone consists of a mixture of the corresponding ketones. Suggested uses: as a wax or wax extender. Availability: experimental quantities. Emery Industries, Inc.

TETRA HYDRO FURFURYL ESTER CONCENTRATE OF 2,4-D ACID

Low volatile 2,4-D ester for brush and weed control. 96% purity. Readily soluble in aromatic and most petroleum solvents. Available commercially. Rohm and Haas Co.

TITANOX-C-50*

New rutile-calcium pigment composed of 50% rutile titanium dioxide and 50% calcium sulphate. White pigment intermediate in hiding power between pure rutile titanium dioxide and ordinary 10% rutile-calcium pigment. Suitable for a wide variety of paint and other com-



**"...get the
Valve Seal A."**

Plug valves operate easier, stay cleaner longer, when pressure-lubricated with Dow Corning Valve Seal A. Nonmelting at temperatures as high as 500° F., this silicone lubricant is highly resistant to oxidation, moisture, and a wide variety of chemicals and gases. Noncorrosive to metals, without swelling effect on rubber or plastics, Valve Seal A is also physiologically inert. Its vapor pressure is low, even at elevated temperatures.

Valve Seal's versatility helps solve the problem of stocking large numbers of special purpose lubricants, too. Its stability pays off in reduced cleaning schedules, increased valve life and uninterrupted production. Its lack of toxicity is important in food processing lines.

In plug valves, automatic control valves, flow meter bearings, ceramic plug cocks and in pump packings—wherever conventional lubricants are limited by extreme temperatures, corrosive chemicals or steam—specify Valve Seal A.

See for Yourself

DOW CORNING

SILICONES

Please send data sheet BS-21 on properties and performance of VSA, including tables of resistance to over 120 different chemical services.

Name _____

Company _____

City _____ **State** _____

DOW CORNING CORPORATION

Midland • Michigan

CW Report

positions requiring white pigment. Commercially available. Titanium Pigment Corp., National Lead Co.

TOXIMUL

The family name of a new series of anionic agricultural emulsifying agents, characterized by the extremely high dispersibility imparted to emulsifiable concentrates of Toxaphene, chlordane, etc. Nitol Laboratories.

TRITON X-102

Surface active compound of the alkyl aryl polyether alcohol type, not water soluble. It is a non-ionic detergent and emulsifier with a cloud point of about 85-92 C. The high stability and solubility of Triton X-102 in hot cleaning baths suggest applications in metal cleaning and similar operations. Specific gravity, 1.062-1.071. Soluble in water, aromatic hydrocarbons, ether, alcohol, chlorinated hydrocarbons, glycol, pH of 5% solution, 7.9. Available commercially. Rohm and Haas Co.

TRITON X-114

Low foaming surface active non-ionic compound used as wetting agent, detergent, emulsifying and dispersing agent. It is a non-ionic compound in the alkyl aryl polyether alcohol group. Triton X-114 gives excellent detergency on hard surfaces, good wetting and rinsing, compatibility with alkalies and other detergents—and most important in many applications—low foaming. Specific gravity, 1.05. pH of 5% sol, 7.9. Soluble in esters, ketones, aromatic hydrocarbons. Available commercially. Rohm and Haas Co.

TRITON X-177

Agricultural emulsifier containing an emulsion stabilizer, corrosion inhibitor and foam reducer. It is a blend of an alkyl aryl polyether alcohol and a modified phthalic glycerol alkyd resin. Triton X-177 is an effective emulsifier for DDT and for esters of 2,4-D and 2,4,5-T acids. Specific gravity, 1.00-1.02. pH of 5% solution, 8.5-9.5; soluble in aromatic-type oils. Available commercially. Rohm and Haas Co.

TRITON X-188

A general purpose emulsifier for chlorinated insecticides and weed killers. Triton X-188 is a blend of alkyl aryl polyether alcohol with an emulsion stabilizer. Specific gravity, 1.005-1.025, soluble in aromatic type oils, pH of 5% solution, 7.9. Available commercially. Rohm and Haas Co.

UFORMITE 400

An high-solids, aqueous urea-formaldehyde resin adhesive for hot press, cold bonding, lumber-core gluing by clamp-carrier or high frequency, reaggregated wood bonding, and other specialty applications. Suitable for bulk shipment and storage; at 75 F., has a useful life of six months. Has excellent viscosity stability, may be used with low cost extenders. Requires catalyst. Available in tank-car quantities. Rohm and Haas Co.

UFORMITE 711

Cationic, nitrogenous wet strength resin for paper. Solids content: 35% in water. Viscosity (Gardner), D-F, pH: 7.5-8.5. Appearance: clear, pale straw color. Performance characteristics: 55-65% wet strength of the machine, easily prepared, convenient pH control with acid or alum insensitive to sulfate ion. The machine may be adjusted at any point on the machine. Available in tank-car quantities. Rohm and Haas Co.

UFORMITE F-158

An urea-formaldehyde coating resin utilizing propyl instead of butyl alcohol as modifier. Solids content, 48-52%; solvent (7:3 propyl alcohol-xylol), 52-48%; viscosity (Gardner), V.Z. Mineral thinner tolerance: 7 c.c. minimum per 10 g. solution. Iso-octane tolerance: 6 c.c. minimum per 10 g. solution. Acid number (solids): 6.9. Appearance: colorless, clear. Performance characteristics: excellent gloss and gloss retention, color and color retention, stability, resistance to water, baking speed. Good hardness, adhesion. Use: in varied baking coatings, ranging from white enamels for washing machines and kitchen cabinets to resistant coatings for industrial equipment. Available in commercial quantities. Rohm and Haas Co.

UFORMITE F-233

An urea-formaldehyde coating resin with high compatibility for long oil and highly polymerized aldehyds. Solids, 48-52%; solvent (6:4 butanol-xylol), 52-48%; viscosity (Gardner); K-P; Acid number (solids), 4.7. Appearance: colorless and clear. Mineral thinner tolerance: 30 c.c. minimum per 10 g. of solution. Iso-octane tolerance:

20 c.c. minimum per 10 g. of solution. Weight per gallon: 8.5 pounds. Performance characteristics (in white enamels)—Excellent stability, gloss, adhesion, resistance to water, compatibility with weak solvents. Good speed of cure, resistance to alkali. Used: Baking primers and enamels for automotive applications. All types of industrial baking enamels such as those used for dipping, roller coating and spraying on metal office furniture, industrial equipment, washing machines and kitchen cabinets. Available in commercial quantities. Rohm and Haas Co.

UFORMITE M-311

An alkyd-modified triazine coating resin for high quality white baking enamels for washing machines, refrigerators, stoves, and kitchen cabinets. Solids, 50%; xylol, 50%; Amine resin solids, 60%; Non-drying alkyd solids, 40%; Viscosity (Gardner), Q-T. Mineral thinner tolerance: 5 c.c. per 10 g. solution. Iso-octane tolerance: 5 c.c. minimum per 10 g. solution. Acid number (solids): 3 max; Acid number (solids), 4.7; Weight per gallon, 7.8 pounds. Performance characteristics: Excellent gloss and gloss retention, resistance to humidity and hot water, color retention, curing speed, resistance to soap and alkali, film uniformity. Good adhesion and enamel stability. Available in commercial quantities. Rohm and Haas Co.

UFORMITE MM-46

A melanine-formaldehyde coating resin for use in automotive baking enamels and in fast baking formulations employing high phthalic alkyds. Solids content is 60%, xylol and butanol each 20%. Viscosity (Gardner), I-L. Mineral thinner and iso-octane tolerance: 5 c.c. minimum per 10 g. of solution. Appearance: colorless and clear. Acid number (solids): 2 maximum. Weight per gallon: 8.3 pounds. Performance characteristics: Excellent compatibility with short and medium oil alkyds, gloss and gloss retention, color and color retention. Good tolerance for weak solvents, durability, resistance to soap and alkali, adhesion, enamel stability. Cures rapidly. Available in commercial quantities. Rohm and Haas Co.

UFORMITE QR-336

A triazine type thermosetting coating resin supplied with 100% solids. Appearance: transparent to translucent chunks. Melting point: 58-63 C. Viscosity (60% solids in 1:1 xylol-butanol): 1.0. Solids in a variety of materials including aromatic hydrocarbons, ketones, esters and ester plasticizers. Uses: in many applications where standard nitrogenous resins will not serve. Also in more conventional applications such as alkyd type baking enamels. Available in pilot-plant quantities. Rohm and Haas Co.

VICTAWET 35BP1

An amber colored syrupy liquid blend of phosphates containing non-ionic and anionic surfactants. Forms clear solutions in water. Suggested uses: Wetting agent and emulsifier, where clear solutions are desired. Availability: semi-Commercial quantities. Victor Chemical Works.

WAX, 240, 280, 285, AND 290

A series of fatty amide, synthetic waxes made from a variety of acids (stearic, behenic, oleic, and stearic acid) and ethylene diamine. All waxes named after their approximate melting point and degrees Fahrenheit. Example: 280 Wax—(N: N'-distearoyl ethylene diamine) melting point, 280-290 F.; acid value, 10 maximum; flash, 545 F.; fire, 580 F.; color, tannish white; form, bead; dielectric strength, 400 V/Mil. Use, anti-blocking, waterproofing, electrical insulating, and mold release agents. Used in other wax blends and asphalt compounds, as far as paper, asphalt, electrical papers, and dipping wax blends, to increase softening point, inhibit cold flow properties, and simultaneously either increase or decrease viscosity, depending on wax used. A special interest in 240 Wax as mutual solvent for polyamide resin and paraffin wax for heat sealing wax papers. Stops breathing of wax paper and assists heat sealing and anti-blocking properties. Carlisle Chemical Works, Inc.

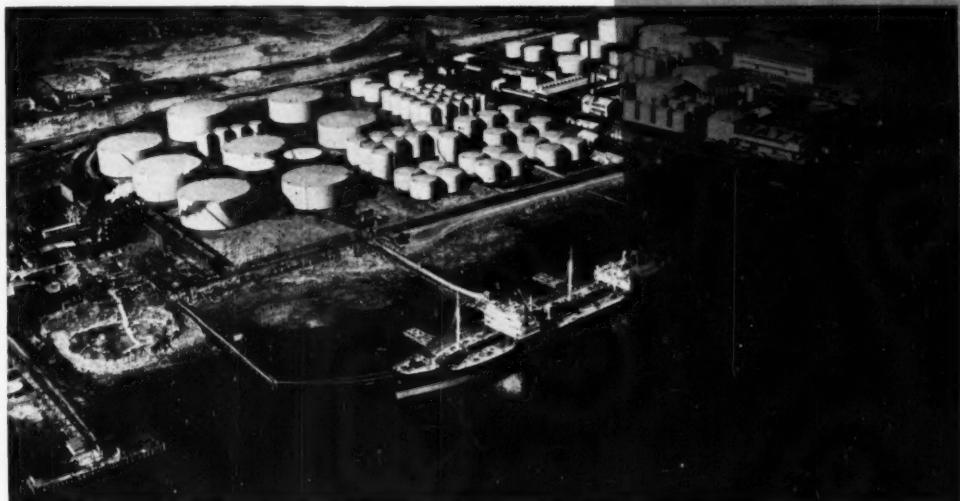
ZEOLEX 20

A reinforcing white pigment for rubber and plastic products; chemically, a silico aluminate. J. M. Huber Corp.

ZINROS

A pale, high melting metal resinate. Color, M; M. P. 150 C. (Cap. Tube); Acid Value, 39 (calc.). Metallic content, 7.4%. Soluble in petroleum solvents, coal tar solvents, terpene solvents, drying oils, esters, and ethers. Compatible with cellulose. Suggested for heat-set and rotogravure printing inks. Commercially available. Newport Industries, Inc.

privacy
for profits



Leasing General American terminal facilities is sound management. By leasing, you can figure operating expenses exactly. General American public tank storage terminals are located in 5 of America's richest markets. *Complete privacy is guaranteed.* The modern equipment is yours to use, without any investment, without risking capital.

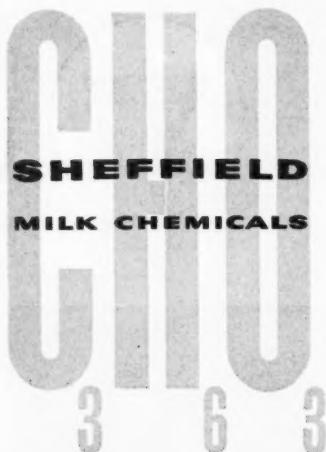
**GENERAL AMERICAN
TANK STORAGE TERMINALS**

A Division of General American Transportation Corporation
135 South La Salle Street Chicago 90, Illinois

**5 tank
storage terminals
in
important marketing
areas**

- Port of New York (Carteret, N. J.)
- Port of New Orleans (Goodhope, La.)
- Chicago
- Houston
- Corpus Christi

ADDRESSES OF COMPANIES LISTED IN REPORT



LAETIC ACID

Derived exclusively from milk sources—
superior quality—exceptional uniformity

Edible 50%

For
PHARMACEUTICALS
BEVERAGES
FOODS
LACTATE SALTS

Technical 44%

For
LEATHER AND TEXTILE
APPLICATIONS
ORGANIC ESTERS
ADHESIVES
SYNTHETIC RESINS

OTHER GRADES PRODUCED ON ORDER

Chemical Division

Sheffield Farms Company, Inc.

MAIN SALES OFFICE, NORWICH, NEW YORK, or
Branch Sales Office, 524 W. 57th St., New York 19, N.Y.

A DIVISION OF NATIONAL DAIRY PRODUCTS CORPORATION

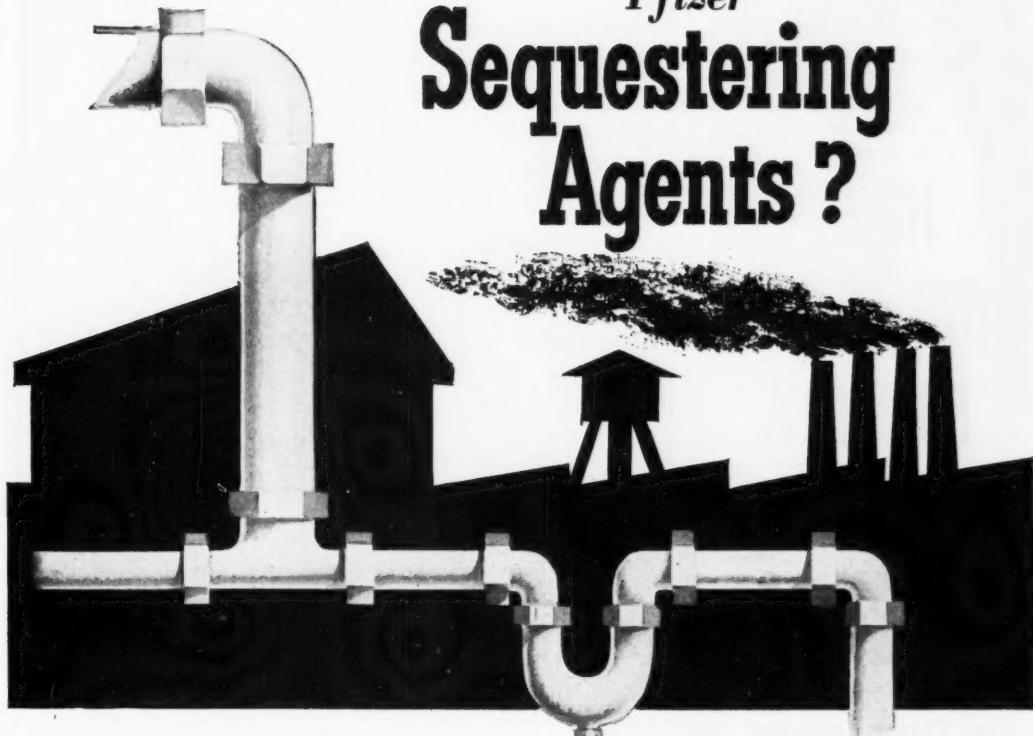
SHEFFIELD

American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N.Y.
American Monomer Corp., 511 Lancaster St., Leominster, Mass.
American Polymer Corp., 101 Foster St., Peabody, Mass.
American Resinous Chemicals Corp., Peabody, Mass.
J. T. Baker Chemical Co., Phillipsburg, N.J.
Benzol Products Co., 237 South St., Newark 5, N.J.
Cadet Chemical Corp., 205 Chicago St., Buffalo 5, N.Y.
Calco Chemical Div., American Cyanamid Co., Bound Brook, N.J.
Carbide and Carbon Chemicals Co., Div. of Union Carbide and Carbon Corp., 30 East 42 St., New York 17, N.Y.
Carlisle Chemical Works, Inc., Reading 15, O.
The Carwin Co., North Haven, Conn.
City Chemical Corp., 132 West 22 St., New York 11, N.Y.
Corn Products Sales Co., 17 Battery Place, New York 4, N.Y.
The Curran Corp., South Canal St., Lawrence, Mass.
Dajac Laboratories, Div. of Monomer-Polymer, Inc., 511 Lancaster St., Leominster, Mass.
Dodge & Olcott, Inc., 180 Varick St., New York 14, N.Y.
E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.
Thomas A. Edison, Inc., Stuyvesant Falls, N.Y.
El Dorado Oil Works, Foot of Adeline St., Oakland 20, Calif.
Emery Industries, Inc., 2504 Carew Tower, Cincinnati 2, O.
Ethyl Corp., 100 Park Avenue Building, New York 17, N.Y.
The Glidden Co., 1396 Union Commerce Building, Cleveland 14, O.
The Hilton-Davis Chemical Co., 2235 Langdon Farm Road, Cincinnati 12, O.
J. M. Huber Corp., 100 Park Ave., New York 17, N.Y.
Jefferson Chemical Co., Inc., 260 Madison Ave., New York 16, N.Y.
Kay-Fries Chemicals, Inc., 180 Madison Ave., New York 16, N.Y.
The M. W. Kellogg Co., P. O. Box 469, Jersey City 3, N.J.
Kessler Chemical Co., Inc., State Road and Cottman Ave., Philadelphia 35, Pa.
Krishell Laboratories, Inc., 1735 S.E. Powell Blvd., Portland 2, Ore.
Mathieson Chemical Corp., Matheson Building, Baltimore 3, Md.
Metalead Products Corp., Mills Building, San Francisco 4, Calif.
The Miranol Chemical Co., Inc., 16 Melville Place, Irvington 11, N.J.
Morton-Withers Chemical Co., 2110 High Point Road, Greensboro, N.C.
Monsanto Chemical Co., 1700 South 2 St., St. Louis 4, Mo.
Mutual Chemical Co. of America, 270 Madison Ave., New York 16, N.Y.
National Lead Co., 111 Broadway, New York 6, N.Y.
Newport Industries, Inc., 230 Park Ave., New York 17, N.Y.
Ninol Laboratories, 1719 South Clinton St., Chicago 16, Ill.
Nopco Chemical Co., Langdon and Potter Sts., Harrison, N.J.
Ohio-Apex, Inc., Div. of Food Machinery and Chemical Corp., Nitro, W.Va.
Oronite Chemical Co., 38 Sansome St., San Francisco 4, Calif.
Pennsylvania Salt Manufacturing Co., 1000 Widener Building, Philadelphia 7, Pa.
Chas. Pfizer & Co., Inc., 630 Flushing Ave., Brooklyn 6, N.Y.
Poughkeepsie Dyestuff Corp., 77 N. Water St., Poughkeepsie, N.Y.
Riker Laboratories, Inc., P. O. Box 3157, Terminal Annex, Los Angeles 54, Calif.
Rohm & Haas Co., Washington Square, Philadelphia 5, Pa.
Shawinigan Products Corp., 350 Fifth Ave., New York 1, N.Y.
L. Sonneborn Sons, Inc., 300 Fourth Ave., New York 10, N.Y.
Sylvania Electric Products, Inc., 1740 Broadway, New York 19, N.Y.
Takamine Laboratory, Inc., Clifton, N.J.
Tracerlab, Inc., 130 High St., Boston 10, Mass.
Victor Chemical Works, 141 W. Jackson Blvd., Chicago 4, Ill.
Virginia-Carolina Chemical Corp., 401 E. Main St., Richmond, Va.
Western Electrochemical Co., 9036 Culver Blvd., Culver City, Calif.
Westvaco Chemical Div., Food Machinery and Chemical Corp., 161 E. 42 St., New York 17, N.Y.
Woburn Chemical Corp., 1200 Harrison Ave., Harrison, N.J.
Jacques Wolf & Co., Passaic, N.J.

Do You Know
the "Ins and Outs" of these

Pfizer

Sequestering Agents?



• Unwanted traces of iron, aluminum, copper and other metals picked up from pipe lines and processing equipment can be rendered inactive by the use of a Pfizer sequestering agent. You can put "in" Pfizer Citric or Gluconic Acid—or one of their derivatives*—to sequester "out" the metallic contaminants which interfere with efficient operation in your plant.

Pfizer Citrates and Gluconates are recommended as sequestering agents 'in'...

The textile industry...to inactivate trace metals in dyeing, bleaching, kier boiling and mercerizing.

The leather industry...to adjust tanning solutions to the proper pH without precipitation.

Oil and fat industry...to inactivate trace metals which lead to rancidity.

Weed killer formulations...to prevent formation of insoluble, inactive salts in hard water areas.

Municipal and industrial water systems...to prevent the precipitation of metallic contaminants.

*Sodium Citrate, Sodium Gluconate,
Ammonium Gluconate

PUT "IN"	SEQUESTER "OUT"	pH
CITRIC ACID Sequestering action of 100 parts of acid	Iron (Ferric) 19 Parts Aluminum 19 Parts Copper 26 Parts Zinc 44 Parts Cobalt 95 Parts	7 7 7 7 10
GLUCONIC ACID Sequestering action of 100 parts of acid	Iron (Ferric) 24 Parts Aluminum 4 Parts Copper 26 Parts Zinc 27 Parts Cobalt 6 Parts	7 7 7 7 10



Pfizer has a wealth of information on the effectiveness of these Citrate and Gluconate sequestering agents. For additional data, write:

CHAS. PFIZER & CO., INC.

630 Flushing Ave., Brooklyn 6, N. Y.

Branch Offices: Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.



PFIZER

Manufacturing Chemists for Over 100 Years

NOW! HIGH GRADE MURIATE OF POTASH

DUVAL

Sulphur and Potash Company

**Modern, New Plant
And Refinery
At Carlsbad,
New Mexico**

Address all communications to

ASHCRAFT-
WILKINSON CO.

Exclusive Distributors

ATLANTA, GEORGIA
Cable Address ASHCRAFT

Cable Address ASHCRAFT

NORFOLK, VA

CHARLESTON S. C.

TAMPA FLA

COLUMBUS, OHIO

PRODUCTION

ESTIMATED FREIGHT COSTS

SULFUR OR PYRITES (one ton):

To H₂SO₄ Manufacturing Centers



What Price Sulfuric?

MRI's Wessel and Holmes have just concluded a study on costs of making sulfuric acid from various sulfur sources.

On the basis of a reasonable return on investment, they predict an acid selling price, f.o.b. production point; they also consider the effect of freight rates.

Here is what they found, as told to **CHEMICAL WEEK** in an exclusive interview last week:

You have a choice on the market picture for sulfur this week. Either it's short or it isn't short, depending whether the government, in the person of NPA or DPA, or industry, in the person of Freeport Sulphur,[®] is talking. But while the two are at loggerheads on the exact relationship between supply and demand, there is widespread agreement that the situation has perked up considerably in the last few months.

Actually, of course, the whole question is strictly an economic one. There's enough sulfur for the foreseeable future to make everyone happy. The problem: Is there enough at the right price?

Last week, for an inside look at what portends for sulfur and sulfuric acid, CW called on the Midwest Research Institute in Kansas City (Mo.), interviewed H. E. Wessel, senior chemical engineer, and E. O. Holmes, former associate chemist now director of the Kansas City Testing Lab. The two have just concluded an economic study of sulfur, particularly on the costs of making sulfuric acid.

In the next ten years or less, Wessel and Holmes point out, four major sources aside from brimstone loom for sulfuric acid: marginal (i.e. by present price standards) native sulfur, natural or refinery gases, smelter gases and pyrites. To evaluate their relative importance, Wessel and Holmes have worked up an estimate of the costs for making sulfuric acid from each source. And on the basis of a reasonable

* As number two U.S. producer of sulfur, Freeport accounts for roughly 25% of the country's supply. It holds the shortage is "virtually over," the outlook "extremely encouraging." Texas Gulf Sulphur, number one producer, remains noncommittal on the subject.

THERE'S A TOUCH OF TENNESSEE IN ILLINOIS FARM MACHINERY



In the cotton fields of the South, in the corn fields of the Middle West, in the wheat fields of the Great Plains and the Great Northwest, in agricultural operations the world over, Farm Machinery from Illinois is used.

TENNESSEE supplies ferro alloys and pig iron for the steel and castings that build these machines, solvents for the paints and lacquers that protect them as well as many other chemical and metallurgical materials that help make Illinois Farm Machinery.

Manufacturers across the nation shipping their finished products around the world look to **TENNESSEE** for many items essential to their production. That's why **TENNESSEE** is known from Coast to Coast as an industry serving all industry.



TENNESSEE PRODUCTS & CHEMICAL

Corporation

NASHVILLE, TENNESSEE

Producers of: FUELS • METALLURGICAL PRODUCTS • TENSULATE BUILDING PRODUCTS • AROMATIC CHEMICALS WOOD CHEMICALS • AGRICULTURAL CHEMICALS



STEARIC ACIDS

Quality Uniformity Service

CENTURY 1240

- Supra grade Stearic Acid—a white crystalline stearic acid particularly suited for use in fine cosmetics, creams and lotions, pharmaceuticals and other products requiring the highest grade stearic acid with a low iodine value of 0.5 - 1.5.

CENTURY 1230

- Triple Pressed Stearic Acid—a fine grade finding wide usage where superior color and stability are needed.

CENTURY 1220

- Double Pressed Stearic Acid—a regular grade of stearic acid for use where good color and lower titre are acceptable.

CENTURY 1210

- Single Pressed Stearic Acid—a standard single pressed grade of better than average color for use where cost is a factor.

OTHER CENTURY PRODUCTS

- Red Oil • Hydrogenated Fatty Acids
- Animal and Vegetable Fatty Acids
- Glycerine
- White Oleine • Stearine Pitch

W. C. HARDESTY CO., Inc.

Century Stearic Acid Products, Inc.

41 East 42nd St., New York 17, N. Y.

Plant: Dover, Ohio

In Canada:

W. C. Hardesty Co.
of Canada Ltd., Toronto

PRODUCTION



WESSEL AND HOLMES: Aside from brimstone, four major sources loom.

able return on the investment in fixed and working capital, they predict an acid selling price, f.o.b. production point. In addition, they have taken into account the part played by freight rates in the overall picture.

Three for One: For a sulfuric-from-sulfur plant making 200 tons* a day, and with sulfur charged at \$23 a ton at the plant, Wessel and Holmes figure manufacturing costs will run about \$13.40 a ton. Assuming a 5% overhead for selling and administration and a 60% income tax rate, acid selling for \$20 a ton would yield a return of 10-11% on the required total investment of \$1.45 million.

Currently some sulfur is selling for as little as \$18 a ton on long-term contracts; correspondingly, some acid is going for less than \$20 a ton. But both will rise when the long-term contracts expire. Freeport Sulphur indicates an average selling price (for 1951) of a \$21-22 a ton, f.o.b. mine. In any case, it's evident that a price rise of \$3 a ton for sulfur will boost the acid price by about \$1 a ton.

It's possible to work Frasch-minable deposits at a faster rate but that means higher operating and capital expenses, a higher cost product. On the other hand, a higher price for sulfur would be a big incentive to the industry. It would bring out more sulfur, stimulate the search for new Frasch sources. And the price could go up to \$30 a ton without placing the acid price over \$25 a ton. But whether the move

would uncover any large reserves is a moot question.

Competitive but Limited: One estimate gives the cost of winning sulfur from natural gas at \$16.40 a ton for a 15 ton-a-day plant. Although there are no figures on the size for an average plant, few would run over 50 tons a day because of the limited availability of gas.

With the preliminary scrubbing

From Sulfur

Cost per Ton of Acid

Sulfur, 688 lbs., \$20 per	\$7.0
ton plus \$3 freight	
Water, cooling and process	0.4
Power	0.4
Labor	1.3
Maintenance	1.9
Depreciation	1.9
Insurance	0.5

Total manufacturing cost \$13.4

*Basis: 200 tons of 100% acid a day
Fixed capital: \$1.25 million; working
capital: \$0.2 million*

operation for hydrogen sulfide charged against the natural gas production cost.* the \$16.40 value corresponds to a 2.67 year payout. Freight rates to the acid production areas of St. Louis and Chicago would run about \$8-9 a ton, placing the cost of sulfur laid down at the plant at \$24-25 a ton—competitive with \$20 Frasch sulfur, f.o.b. mine.

* It's usually necessary even without sulfur recovery to reduce pipeline corrosion and to meet product specifications.

Producing sulfur from natural gas has proved to be an attractive venture for the gas processors and a significant increase in production is due this year when more plants go on stream. The big drawback is that production from that source is limited by the supplies of natural gas.

Petroleum, too, is rich in sulfur but under present practices up to half of it may leave refinery stacks as waste hydrogen sulfide. Crude oil consumed annually in this country contains an estimated 2.6 million tons, so that potentially over a million tons could be extracted.

Since the sulfur content of the crude varies widely, it's impossible to put a figure on the cost of sulfur from petroleum. But because acid can be made directly from hydrogen sulfide, the source is an important one to the refiners who are big customers for sulfuric acid. That's particularly true on the West Coast where crudes run high in sulfur.

Potentially Biggest: North American smelters are potentially capable of supplying up to three-quarters of the country's sulfur needs. Unfortunately, most of the roasters now in operation produce a gas low in sulfur dioxide concentration (1-3%). And though one contact plant is reportedly operating on a gas that runs 3.5%, the consensus is that, for efficient operation, 7-8% is the minimum.

Moreover, the acid must be produced at the smelter site. And since smelters are usually located in remote

From Smelter Gas

Cost per Ton of Acid

Gas	no charge
Labor	\$1.3
Power	0.3
Maintenance	2.6
Depreciation	2.6
Insurance and taxes	0.6
Total manufacturing cost	\$7.4

*Basis: 200 tons of 100% acid a day
Fixed capital: \$1.9 million; working capital: \$0.2 million*

areas, freight costs wipe out some of the advantages of cheap sulfur dioxide.

One smelter gets around that to some extent by absorbing sulfur dioxide from a dilute gas stream much the same way hydrogen sulfide is stripped from natural gas—but with a different solvent. Upon regeneration of the solvent, liquid sulfur dioxide is recovered. Another smelter roasts ores with oxygen, turns out a sulfur dioxide that can be liquefied directly.

This is the thinking behind the pro-

"HORSE AND BUGGY"

fire protection is not enough today!



The modern industrial plant is a marvel of technological development. Automatic machines manufacture all kinds of products with unbelievable speed and precision.

But the more highly developed the production process, the greater the value of equipment. And the higher the production rate, the more vital the need for continuous, uninterrupted operation.

That's why old-style, make shift fire protection methods should have no place in industry today!

Automatic Sprinkler 10-Point Fire Protection is as modern as your newest production machine. It's scientifically engineered to prevent fire damage to your most costly processing equipment. It employs the most positive, fastest-acting fire detection devices, and the most effective extinguishing methods. It counters every fire hazard in your plant which, unheeded, might lead to disastrous shut-downs.

The whole story is told in straight-forward terms in our new book "The ABC of Fire Protection". Write for your copy today.

"AUTOMATIC" SPRINKLER CORPORATION OF AMERICA
YOUNGSTOWN 1, OHIO
OFFICES IN PRINCIPAL CITIES OF NORTH AND SOUTH AMERICA

"Automatic" Sprinkler

FIRST IN FIRE PROTECTION

**Now
available**

in substantial quantities
for the manufacture of odorless
protective coatings . . .

AMSCO Odorless MINERAL SPIRITS

**manufactured under rigid control to meet
exacting specifications**



Service in 48 States



Complete technical data, prices and samples available on request

PRODUCTION. . . .

duction of liquid sulfur dioxide: Since it contains about 50% sulfur (compared with 30% for 66° Bé sulfuric), shipping it as liquid means a freight saving. But even that it partially offset by the need for pressure tank cars.

Wessel and Holmes have developed a cost estimate for making sulfuric acid from "high-test" sulfur dioxide using a Dorr FluoSolids roaster or a multiple hearth roaster. For a 200 ton-a-day plant, the total investment would be about \$2.1 million; cost per ton of acid, about \$7.40. If the smelter is located in the Idaho-Montana area, the acid could be sold for \$14 a ton to compete with \$20 a ton acid closer to the consumer. With considerations similar to those for an acid-from-sulfur plant, the return on investment could run as low as 8%.

One possibility for manufacturers of triple superphosphate would be to combine Western phosphate with acid from the smelter. By shipping the product to consuming areas as highly concentrated triple super, over-all freight charges might be pared. In any event, before the smelter operator becomes interested in making by-product acid, the extra investment in a tonnage oxygen plant or other facility would have to be justified by advantages in the ore roasting.

From 35% Sulfur Pyrites

Cost per Ton of Acid

Pyrites price on contained sulfur basis:		
	\$0.0	\$20
	per ton	per ton
Sulfur	\$0.0	\$7.0
Power	0.6	0.6
Labor	2.0	2.0
Maintenance	3.3	3.3
Depreciation	3.3	3.3

Insurance and taxes

Total man-

facturing cost \$10.0 \$17.0

Basis: 200 tons of 100% acid a day
Fixed capital: \$2.4 million; working
capital: \$0.2 million

Long and Short Range: For the long range, pyrites—long the primary source of sulfur in foreign countries—may well become the primary source in this country. Known deposits have been estimated by the Bureau of Mines at 76 million tons of sulfur equivalent.

For the short range, it is possible that the price of sulfur could climb to \$30 a ton before pyrites become competitive. On the other hand, Dorr Co. already has contracts for 19 roasters to make acid from pyrites, and four of them are in this country.

Dorr expects the cost of acid from pyrites to be higher than that for elemental sulfur but gives no figure for the charges for sulfur in the pyrites which the acid production must assume. Under conditions comparable to those for plants working on smelter gas and elemental sulfur, if the pyrites are charged at \$20 a ton, Wessel and Holmes figure a return on investment of only 2% for acid selling at \$20 a ton, f.o.b. production point. For \$25 acid, the return is about 7%. With the sulfur in the pyrites charged at no value, the return on \$20 acid is approximately 10%.

Looking to Supplies: What it boils down to, say Wessel and Holmes, is that the upward trend for all forms of sulfur will boost the contract price for acid to \$22-\$25 a ton within the next few years. Many customers can absorb the price increase without much trouble. But the impact on fertilizer producers will be bigger. And small manufacturers who use non-captive acid will have to plot their future with that in mind.

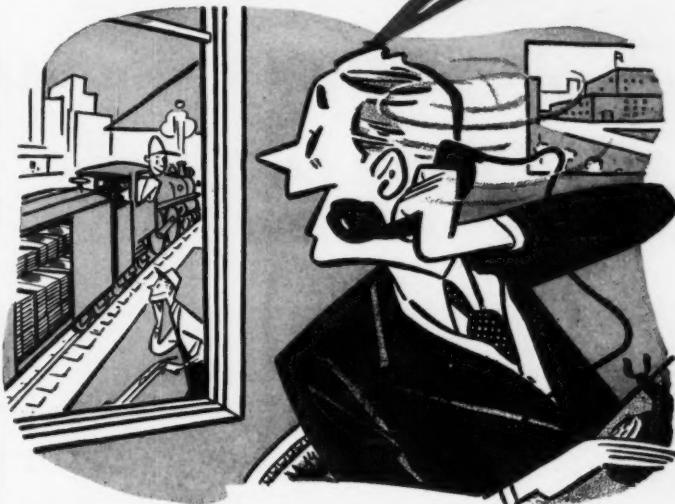
EQUIPMENT . . .

Relief Valves: Mc Donnel & Miller, Inc. (Chicago) is introducing a line of temperature and relief valves. Big feature, says the manufacturer, is a saving in initial cost and installation time. The new valves are automatic-reseating and are Btu-rated for proper selection.

Gear Motor: General Electric (Schenectady, N.Y.) has brought out a new gear motor said to simplify maintenance in case of electric failure of the stator. It's built in three pieces, thus making it possible to remove defective stators without disturbing gear components or gear connections to the load. G.E. figures the new motor gives extra protection against operating wear and tear, physical damage and electrical breakdown. It's being marketed in speed ratings from 780 to 13.5 rpms.

Faster Grinding: A one-year test on its new grinding media (Super Porcelain Balls and Brick) indicates the possibility of better grinding in less time, reports McDaniel Refractory Porcelain Co. (Beaver Falls, Pa.). For the test, McDaniel lined half the mill with its regular line of porcelain brick, half with the new material; used its new grinding balls. After 205 charges (involving over 2,700 hours of operation and almost 5 million revolutions), the lining was removed. Examination showed a substantial improvement in durability for the new material.

HELLO...BEMIS? I WANT TO ORDER A
CARLOAD OF MULTIWALLS. WHEN DO
YOU THINK...OH! HERE THEY ARE!
WHAT TOOK YOU SO LONG?



Don't pin us down to that, please. But, no fooling, the twelve Bemis multiwall plants, strategically located coast to coast, mean that at least one is conveniently close to you. This time-saving means money-saving. Ask your Bemis Man for details.



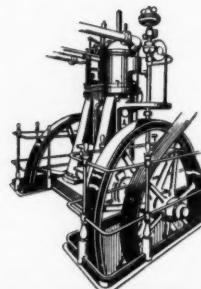
Bemis



General Offices — St. Louis 2, Mo.
Offices in all Principal Cities

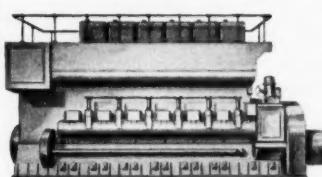
- SODIUM BICHROMATE
- SODIUM CHROMATE
- POTASSIUM BICHROMATE
- SODIUM SULPHATE

1909



AN EARLY
DIESEL
ENGINE

1952



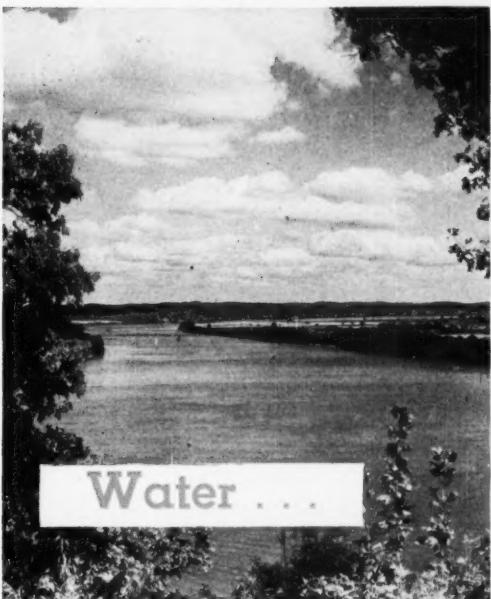
A MODERN DIESEL ENGINE



NATURAL PRODUCTS REFINING CO. • JERSEY CITY 5, N. J.

NP 150

DISTRIBUTION



Water . . .

Enough for processing or cooling? What's the analysis?

EWING GALLOWAY



Politics . . .

How is the local government? What's the outlook on taxes?

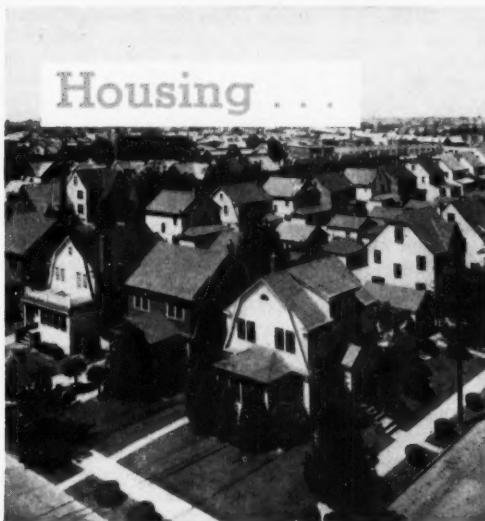
EWING GALLOWAY

Information Rounds Up Revenue

Last week, in a harried mood brought on by a tough decision on the selection of a multi-million-dollar-plant site, the chemical director of a large Eastern company blurted, "They're a pain in the neck!" But on the other side of the continent, another chemical execu-

tive had nothing but praise: "They're the final word for facts and figures about this area." The subject of both comments: the railroad industrial agents, whose job it is to attract industry to sites along their respective tracks.

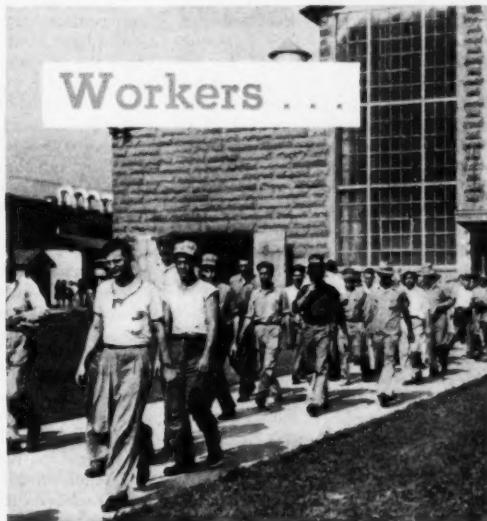
Because these agents act as midwives at the birth of so many chemical installations, and because the locations of these plants have such a direct effect on the chemical distribution pattern, thereby affecting the industry's future, CW talked to agents in all parts



Housing . . .

Are new homes needed? Or are neighbors too close?

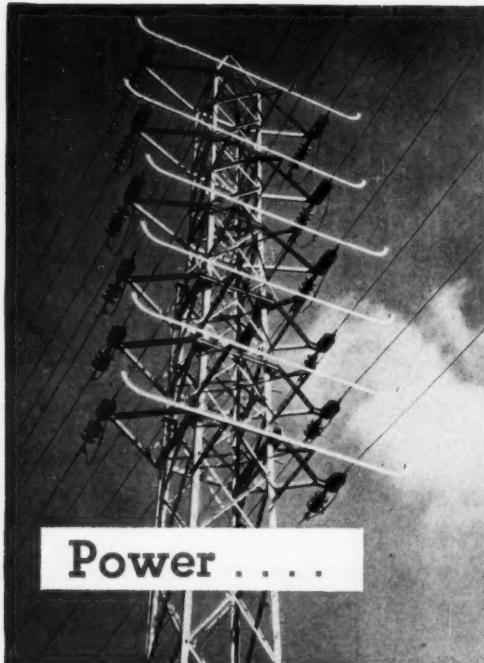
EWING GALLOWAY



Workers . . .

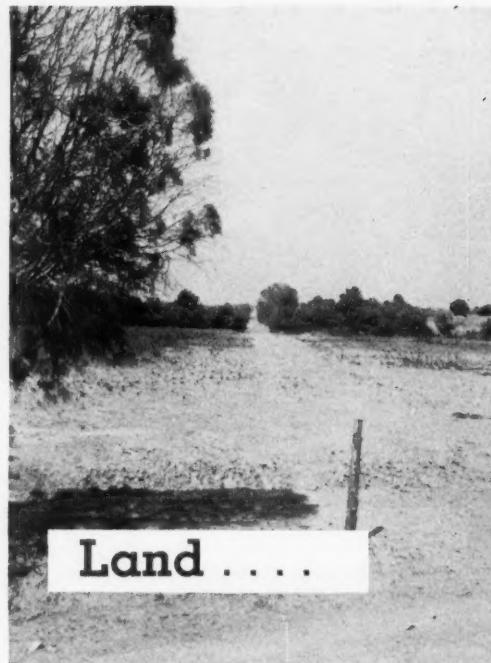
Enough skilled help nearby? How about unions and wages?

EWING GALLOWAY



Power . . .

Are the rates high? Does it come from water power or coal?



Land . . .

How much, where, and what kind? Floods or earthquakes?

... Rounding Up Revenue

of the U.S. to determine what kind of a job they are doing.

The survey indicates that railroad agents, as a group, are an eager, knowledgeable, and aggressive fraternity. Also as a group, they are eagerly eyeing the continuing chemical construction boom. They are especially anxious to bring chemical process plants into their areas because, as one agent puts it: "Your industry is practically depression-proof, is basic to all other industries, keeps ahead by constant research, and is noted for having the best all-around management."

This attitude is reflected in the efforts which the omnipresent Pace brothers, Anderson and Walter, of the Illinois Central, have put into building up the Paducah-Calvert City area of Kentucky as a "chemical center." It can also be assumed that the growing importance of Memphis, Tenn., as a hub of chemical commerce (CW, August 30) can be credited to the smooth salesmanship of these two men.

The Pace brothers don't believe in the shotgun techniques of direct-mail brochures and national advertising, prefer to operate on a top-level personal basis. But other successful industrial agents make no efforts to pull

their punches. "We'll do anything short of murder for the prospect," says one, "in order to get the revenue which he will be able to offer."

No Stones Unturned: The agent's job is essentially to (1) search out and contact companies looking for new plant locations, and (2) convince the prospect that no spot in the country is quite as advantageous as the ones available along the railroad's trackage.

The first task is common to all types of selling, but the second one calls for a complex approach. The railroads cannot simply extol their own assets—instead, they must sell the prospective builder on the "personality" of an entire region, state, county, town, or village. This personality is the sum of a bewildering number of facets which must be searched out and presented to the prospect in the best possible light.

These go well beyond the normal curiosity as to raw material sources and available markets. The individual companies can usually figure out these for themselves. Rather, there seems to be no limit on the number of different factors which a prospect will want to take into consideration in making his decision. In spite of the fact that the

industrial agent is a central clearing house for information from chambers of commerce, power companies, government agencies, *et al.*, on-the-spot legwork is the daily routine.

One large chemical company, for instance, was evaluating a location in Oregon, had the Southern Pacific Railroad check up on such diverse items as sample menus from downtown restaurants, type of jewelry and clothing sold in local stores, per cent of aliens in the population, and whether the average home owner cut his own grass or had the gardener do it.

Basic Facts: But most of the time, the industrial agent is dishing out a steady stream of basic information about his line's territory. These data fall into a set pattern, answer most of the prospects critical problems. The pictures on these pages illustrate the questions most often asked by chemical executives.

Not all railroads feel that they can afford a fully integrated industrial agency; but, small or large, each agent's office is a treasure-trove of information. On the basis that a well-informed decision is usually the best one possible, the chemical industry can be thankful that, during its present expansion boom, it can take full advantage of the agents' wide knowledge.



Dependable Source For Chemical Raw Materials



"Wyandotte Krelon has good sudsing characteristics and solubility"

—says L. Carlton Mertz, Chicago, Illinois

BULLETIN BOARD

Dicrol®:

This mixture of diglycols, predominantly diethylene glycol, has shown outstanding efficiency in plasticizing and humectant applications . . . plus up to 20% savings! Write for samples, data.

Caustic Soda:

Some cleaning compound manufacturers are finding that powdered caustic has some advantages over flake. Since other ingredients are powdered or fine-ground, a dust-suppressing agent is needed anyway, and the powdered caustic does not tend to segregate. Ask for trial quantity.

Carbose®:

Raw-material cost reductions of up to 50% have resulted from the use of this Na CMC, according to field reports. In tests, as little as 1% Carbose has increased soil removal, and whiteness retention as much as 10-40% in various formulations. Ask for samples.

"We've been in the cleaning compound business for more than 21 years," says Mr. Mertz, owner of L. Carlton Mertz Company, Chicago.

"Today, we make more than 100 products for dairy cleaning, metal fabricating and processing, and general maintenance work.

"To maintain our quality and keep pace with the industry, we make a constant check on all of our sources of supply.

"We find new, improved WYANDOTTE KRELON has good sudsing characteristics and rapid solubility—is very satisfactory for our purposes. We use it in a number of our quality detergents."

Have you tried our improved WYANDOTTE KRELON? Its characteristics may be helpful to your products, speed your process, or cut your over-all cleaning costs. Send for a FREE sample, and a copy of our new 28-page book. It contains complete data. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Offices in Principal Cities.*

*REG. U. S. PAT. OFF.

 **Wyandotte**
CHEMICALS
HEADQUARTERS FOR ALKALIES

Sulphur



*Thousands of tons
mined daily,
but where does it all go?*

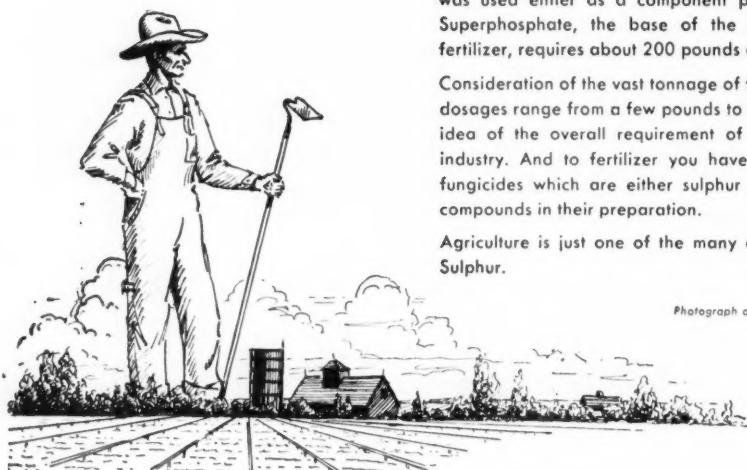
THE DEPARTMENT OF AGRICULTURE reports that in 1950 some 336,000,000 acres of land in the United States were under crop cultivation. That's a lot of acreage.

But where, you might ask, is the connection with Sulphur? Fertilizer, to take just one phase of agriculturally-used chemicals in which Sulphur was used either as a component part or as a processing element! Superphosphate, the base of the most widely used manufactured fertilizer, requires about 200 pounds of Sulphur for every ton produced.

Consideration of the vast tonnage of fertilizer used in agriculture — and dosages range from a few pounds to a ton or more per acre — gives an idea of the overall requirement of Sulphur for this one division of industry. And to fertilizer you have to add all the insecticides and fungicides which are either sulphur derivatives or have used sulphur compounds in their preparation.

Agriculture is just one of the many destinations of great tonnages of Sulphur.

Photograph above shows our loading dock at Galveston, Texas



Texas Gulf Sulphur Co.

75 East 45th Street, New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas



RESEARCH . . .



Atomic Attack on Insects

Sanibel Island, off Florida's west coast, boasts something new in insect life this summer—atomic mosquitoes, a million and a half of them. They're part of an experiment staged by the Florida State Board of Health to find out how far (and how fast) a salt-marsh mosquito will travel from his hatching-puddle.

The mosquitoes are hatched from eggs in a specially prepared and carefully tended bed in a drainage ditch (top). During their larval stage, the insects acquire an atomic label from radioactive phosphorus added to the water. Later, a check of insect traps (lower left) in the surrounding coun-

try turns up mature members of the labeled tribe, easily identified with a Geiger counter.

Points of capture are spotted on map (lower right) of the area by biologists Maurice Provost (at left, sitting), director of the project, and R. Shepperd. Provost is confident that the experiment "will add considerably . . . to knowledge of the mosquito's travel habits, life-span and [reveal] other significant information to improve our mosquito control program."

Latest results show that Sanibel Island mosquitoes can travel at least 25 miles from their birthplace in search of food and mates.

STATISTICAL QUALITY CONTROL

New Edition Just Published!

Practical treatment of the fast growing technique of statistical quality control for maintaining quality on production line. Gives cost-cutting methods you can put to work with minimum of trouble and expense. Explicit directions given for use of the various techniques, many case-histories illustrate control chart use, and handy tables supply valuable working data. By Eugene L. Grant, Prof. of Econ. of Engr., Stanford Univ. 2nd Ed., 357 pp., 94 Illus., 19 tables, \$6.50

CHEMICAL ENGINEERING FOR PRODUCTION SUPERVISION



Gives plant foremen and supervisors on-the-job aid in the principles of chemistry, physics, and thermodynamics as production factors. Requiring no previous training in chemical engineering to be clearly understood, it helps the non-technical man solve hundreds of everyday production problems. Includes time-saving pointers, analyses of difficulties in operation, efficiency checks on equipment, etc. By David E. Pierce, Chief Engr., General Aniline and Film Corp. 2nd Ed., 232 pp., 58 Illus., \$4.50

SMALL PLANT MANAGEMENT

How to organize, operate, and supervise the small plant. Points up advanced management techniques that can mean maximum production at minimum cost per unit. Covers everything from financial planning and use of sales tools, to machine planning and analyzing management functions. Prepared under the auspices of The American Society of Mechanical Engineers. Edited by Dr. Edward H. Hempel, Chairman, Small Plant Committee, ASME. 499 pp., \$6.00

CHEMICAL ENGINEERS' HANDBOOK



Thoroughly covers both standard and recently compiled facts, figures, and methods applicable not only to chemical engineering but to fields related to the industry. Includes technical data on general theory, diffusion, separation, furnaces and kilns, size enlargement, azeotropic distillation, and a wealth of other topics. Prepared by a staff of over 140 specialists. J. H. Perry, Technical Investigator, E. I. du Pont de Nemours & Co. 3rd Ed., 1942 pp., 2037 Illus., graphs and tables. \$17.50 (Payable on terms)

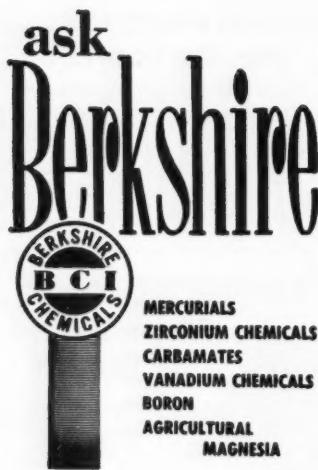
SEE THESE BOOKS 10 DAYS FREE

McGraw-Hill Book Co., 330 W. 42 St., NYC 36
Send me book(s) checked below for 10 days' examination on approval. In 10 days I will remit for book(s). I keep plus a few cents for delivery, and return unneeded book(s) postage paid. (We pay for delivery if you remit with this coupon; same return privilege.)

Grant: *Stat. Qual. Contr.*—\$6.50
 Pierce: *Chem. Engr. for Prod. Sup.*—\$4.50
 ASME: *Small Plant Management*—\$6.00

Perry: *Chem. Engr. Hndbk.*—
\$17.50. (Payable \$1.00 in 10 da., \$4.00 mo.)
(Print)
Name
Address

City Zone.... State....
Company
Position CN-9-6-52
This offer applies to U. S. only



Salteake

**Sodium Sulphate,
Anhydrous**

Lead Cyanamide

Epsom Salts

Sodium Perborate

Potassium Persulphate

**Potassium Nitrate,
Refined, 99.5%**

**Potassium Nitrate, 95%,
Fertilizer Grade**

BERKSHIRE CHEMICALS INC.
GRAYBAR BUILDING
420 Lexington Avenue, New York 17
Lexington 2-5959 • "BERKSHIRE" New York

RESEARCH

Keeping Them Happy

Provision for the less tangible needs of the researcher is now the rule in research personnel administration.

Here's a rundown of current salary, promotion, education and professional recognition policies in the industry.

Despite the popular image of the white-coated, clear-eyed miracle maker, the lot of the industrial researcher could hardly be called "exalted." He's a respected member of the commercial organization, but rarely a privileged character. In general, he finds himself governed by the same basic personnel policies that apply to his less scientific colleagues. But individualized embellishments on basic policy prove conclusively that companies are not unaware of the scientist's special needs, do indeed make an honest effort to keep their researchers—and keep them happy.

Here's a bird's-eye view of what is going on in research personnel administration:

Salary, as might be expected, still is the paramount requisite to professional contentment and perhaps the best measure of achievement. Moreover, salary policies almost universally reflect three major management aims: to compensate the individual for value to the firm; to keep individual salaries on a par with those paid to comparable personnel in other firms; and to permit periodic increases.

Of course these are, at best, guiding principles. How they are brought into play varies considerably from company to company. One rather widespread method of arriving at salary increases is based on a performance rating assigned to each technical staffer by his supervisor. Total money available to the research and development division for the fiscal period is then prorated in accordance with individual classifications.

Another system currently in use in the chemical industry augments job evaluation with consideration of the prevailing salary scale in the area. In practice, the technique works something like this: Supervisory personnel, department and division chiefs, etc., prepare a description of each job and its relative importance in the research structure. All jobs are then grouped into specific position levels.

Eye on the Map: These levels next are assigned a salary range with an eye to the existing rate of compensation for similar positions in the area. Finally, the individual researcher's position is pin-pointed within the appropriate range to provide an exact dollar figure.

Within this framework, general increases are granted, where indicated, to keep the salary scale competitive. Improved performance, however, is rewarded by merit increases which usually are provided for in the research division budget.

In the main, research salaries are still tied pretty closely to sales. But a growing recognition of the importance of consistent and uninterrupted research, even when business is poor, is prompting some notable innovations in conventional research budget policy. One industrial organization, for example, no longer lays off research and engineering personnel when sales are particularly poor. Instead, it correlates salaries to operating conditions. When production schedules are extremely short, salaries dip; and by the same token, salaries automatically receive a proportional boost in times of above-average and near-capacity output.

Although salary schemes may differ considerably, a just-published report by National Industrial Conference Board points up a pertinent (in these days of technical manpower shortages) and generally accepted practice: Increases for the sole purpose of meeting offers from other firms are nearly always denied.

Intangibles: Over and above financial compensation, most industrial organizations today realize, and provide for, the less tangible requirements of their scientific staffers. Attendance at professional society meetings is not the least of these. Time off to attend meetings in the area is common practice. And the majority of large firms generally have several technical representatives at major meetings in distant cities and even, in some cases, foreign countries.

Publication of research papers is encouraged by chemical companies almost without exception, as is advanced professional study. Several firms now provide a refund of all or part of tuition for courses at colleges and universities taken by research personnel.

Policy-Making: A growing tendency to utilize scientific personnel in top-management positions is now being supplemented by increased participation of research people in policy-making functions. In evidence of this

Tried a monoglyceride that's 90% MONOESTER?

Ordinary commercial monoglycerides generally contain less than 50% of monoesters, along with relatively inactive diglycerides, triglycerides, glycerine, fatty acids, and soap. But DPi's distillation methods concentrate the desirable monoester to as much as 90%.

"Monos" act as bridges between oil (or other water-immiscible materials) and water, lowering interfacial tension in proportion to their true monoester content. Their properties as interface modifiers can be varied to match specific needs.

These facts make them useful as components in such products as cosmetic creams, lotions, ointments, lipsticks, lubricants, insecticidal sprays, natural and synthetic resins and waxes, and innumerable other chemical specialties.

NOW AVAILABLE are DPi 90% "monos" of cottonseed oil, lard, and stearic acid. We can also produce—in the quantities you desire—monoglycerides from soybean oil, from various greases and tallow, from castor oil, coconut oil, peanut oil, and from other fatty raw materials (perhaps from your own by-products).

Send for test samples or, better still, let's arrange to discuss your specific qualitative and quantitative needs for monoglycerides.

Write, wire, or phone *Distillation Products Industries*, 789 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company). Sales offices: New York and Chicago • W. M. Gillies & Co., Los Angeles and San Francisco • Charles Albert Smith Ltd., Montreal and Toronto.



**distillers of monoglycerides
from natural fats and oils**

Also...vitamins A and E...high vacuum equipment...

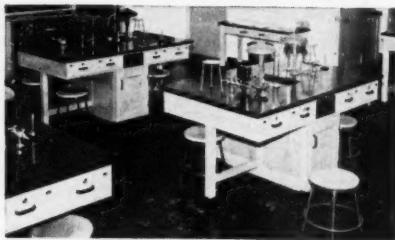
more than 3500 Eastman Organic Chemicals for science and industry

DATA SHEET		Subject: Distilled Monoglycerides Type 18-85												
from the laboratories of DISTILLATION PRODUCTS INDUSTRIES														
<p>Average Chemical and Physical Data</p> <table border="1"> <tr> <td>Monocester Content</td> <td>90.0% (minimum)</td> </tr> <tr> <td>Saponification Value</td> <td>150-160</td> </tr> <tr> <td>Iodine Value</td> <td>80-90</td> </tr> <tr> <td>Glycerol Content</td> <td>1.0% (maximum)</td> </tr> <tr> <td>F.F.A. (as oleic)</td> <td>1.5% (maximum)</td> </tr> <tr> <td>Specific Gravity</td> <td>0.96 @ 60°C</td> </tr> </table>			Monocester Content	90.0% (minimum)	Saponification Value	150-160	Iodine Value	80-90	Glycerol Content	1.0% (maximum)	F.F.A. (as oleic)	1.5% (maximum)	Specific Gravity	0.96 @ 60°C
Monocester Content	90.0% (minimum)													
Saponification Value	150-160													
Iodine Value	80-90													
Glycerol Content	1.0% (maximum)													
F.F.A. (as oleic)	1.5% (maximum)													
Specific Gravity	0.96 @ 60°C													
<p>General Comment: Distilled Monoglycerides is prepared from cottonseed oil and chemically pure glycerine. The product is bland, free of catalyst or presence of...</p>														
DATA SHEET		Subject: Distilled Monoglycerides Type 18-80												
from the laboratories of DISTILLATION PRODUCTS INDUSTRIES														
<p>Average Chemical and Physical Data</p> <table border="1"> <tr> <td>Monocester Content</td> <td>90.0% (minimum)</td> </tr> <tr> <td>Saponification Value</td> <td>160-170</td> </tr> <tr> <td>Iodine Value</td> <td>3 (maximum)</td> </tr> <tr> <td>Glycerol Content</td> <td>1.0% (maximum)</td> </tr> <tr> <td>F.F.A. (as stearic)</td> <td>1.5% (maximum)</td> </tr> <tr> <td>Specific Gravity</td> <td>0.96 @ 75°C</td> </tr> </table>			Monocester Content	90.0% (minimum)	Saponification Value	160-170	Iodine Value	3 (maximum)	Glycerol Content	1.0% (maximum)	F.F.A. (as stearic)	1.5% (maximum)	Specific Gravity	0.96 @ 75°C
Monocester Content	90.0% (minimum)													
Saponification Value	160-170													
Iodine Value	3 (maximum)													
Glycerol Content	1.0% (maximum)													
F.F.A. (as stearic)	1.5% (maximum)													
Specific Gravity	0.96 @ 75°C													
<p>General Comment: Distilled Monoglycerides Type 18-80 is prepared from edible, full hydrogenated lard and chemically pure glycerine. In addition to very high monocester content the product is characterized by blandness, good stability and freedom from...</p>														
DATA SHEET		Subject: Distilled Monoglycerides Type 18-05												
from the laboratories of DISTILLATION PRODUCTS INDUSTRIES														
<p>Average Chemical and Physical Data</p> <table border="1"> <tr> <td>Monocester Content</td> <td>90.0% (minimum)</td> </tr> <tr> <td>Saponification Value</td> <td>160-170</td> </tr> <tr> <td>Iodine Value</td> <td>3 (maximum)</td> </tr> <tr> <td>Glycerol Content</td> <td>2.0% (maximum)</td> </tr> <tr> <td>F.F.A. Content</td> <td>2.0% (maximum)</td> </tr> <tr> <td>Specific Gravity</td> <td>0.96 @ 75°C</td> </tr> </table>			Monocester Content	90.0% (minimum)	Saponification Value	160-170	Iodine Value	3 (maximum)	Glycerol Content	2.0% (maximum)	F.F.A. Content	2.0% (maximum)	Specific Gravity	0.96 @ 75°C
Monocester Content	90.0% (minimum)													
Saponification Value	160-170													
Iodine Value	3 (maximum)													
Glycerol Content	2.0% (maximum)													
F.F.A. Content	2.0% (maximum)													
Specific Gravity	0.96 @ 75°C													
<p>General Comment: Distilled Monoglycerides Type 18-05, a glycerol monostearate of exceptionally high monocester content, is designed particularly for the cosmetic, drug and allied industries. High-grade triple pressed stearic acid and chemically pure glycerine are materials used in its manufacture. ...especially...</p>														
DATA SHEET		Subject: Distilled Monoglycerides Type 18-40												
from the laboratories of DISTILLATION PRODUCTS INDUSTRIES														
<p>Average Chemical and Physical Data</p> <table border="1"> <tr> <td>Monocester Content</td> <td>90.0% (minimum)</td> </tr> <tr> <td>Saponification Number</td> <td>160-170</td> </tr> <tr> <td>Iodine Value</td> <td>4-5%</td> </tr> <tr> <td>Glycerol Content</td> <td>1.0% (maximum)</td> </tr> <tr> <td>F.F.A. (as oleic)</td> <td>1.5% (maximum)</td> </tr> <tr> <td>Specific Gravity</td> <td>0.96 @ 60°C</td> </tr> </table>			Monocester Content	90.0% (minimum)	Saponification Number	160-170	Iodine Value	4-5%	Glycerol Content	1.0% (maximum)	F.F.A. (as oleic)	1.5% (maximum)	Specific Gravity	0.96 @ 60°C
Monocester Content	90.0% (minimum)													
Saponification Number	160-170													
Iodine Value	4-5%													
Glycerol Content	1.0% (maximum)													
F.F.A. (as oleic)	1.5% (maximum)													
Specific Gravity	0.96 @ 60°C													
<p>General Comment: Distilled Monoglycerides Type 18-40 is prepared from prime rendered lard and chemically pure glycerine. In addition to very high monocester content and freedom from catalyst or soap presence, good stability and freedom from...</p>														
<p>Distilled Monoglycerides Type 18-40 is packed and shipped in fat-proof fiber drums of 100 and 250 pounds net. Requests for samples to...</p>														



Sturdy Oak

the **STEEL** of woods...
in all its natural beauty



For your laboratory—famous Kewaunee custom quality furniture in beautiful, long-lasting, natural finish oak. Oak—the steel of woods—for rugged service, long life. Oak—in natural finish—to brighten your laboratory, speed your work.

Specify oak—readily available—for durability and attractiveness. Specify Kewaunee—for finest custom quality, at extremely modest cost. Write today for a free copy of our catalog of Scientific Laboratory Equipment.

Representatives and sales offices in principal cities

Kewaunee Mfg. Co.

J. A. Campbell, President

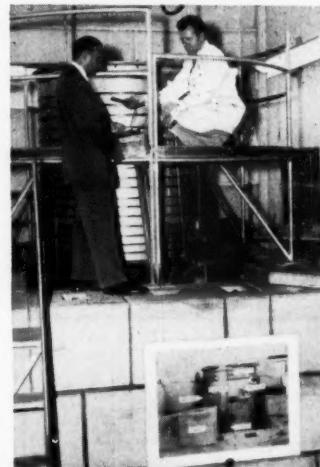
5101 S. Center Street • Adrian, Michigan
Manufacturers of Wood and Metal Laboratory Equipment

RESEARCH

trend, National Industrial Conference Board, Inc., reports:

"Frequently senior research men other than those directly connected with management are permitted to participate in company policy decisions. Membership on company-wide committees and reports to top management are two means of accomplishing this. One company, for example, has a committee consisting of representatives of all divisions and subsidiaries, which meets periodically . . . One or two men from the laboratory attend these meetings, and it is widely known that the committee's recommendations carry great weight with top management."

The wisdom of rewarding a top-notch research man with a desk job, of course, is open to question. The recognition of achievement consequently has become somewhat of a problem as applied to researchers. One prominent firm stands four-square behind the theory that a good scientist is happiest in the laboratory, believes generous compensation and challenging work is the answer. As of now, however, this opinion is conspicuous in an area where "let nature take its course" seems to be the rule.



WIDE WORLD

First for California

CHAUNCY STARR (left) and Don Howard, atomic technologists, measure radiation of North American Aviation, Inc.'s (Downey, Calif.) brand-new water-boiler type nuclear reactor. Built for research purposes, the new reactor is the first for California. Two-foot thick concrete blocks shield the tank-like housing in which the core is located. The engineers are members of the company's atomic energy research department.



CAPACITY

COMMERCIAL transports over two billion ton miles of bulk and liquid cargo annually via Inland Waterways. Direct service . . . no interchanges . . . no costly layovers.

COMMERCIAL PETROLEUM & TRANSPORT CO.

HOUSTON, TEXAS



ST. LOUIS, MO.

Mellie Esperson Bldg.

Railway Exchange Bldg.

AFFILIATES—BUTCHER-ARTHUR INC., WATERWAYS TRANSPORTATION, INC.

There's more to a "SQUEEZE" than you think



Squeezing this Plaxpak bottle forces sealing compound out of spout in narrow ribbon.

Squeeze of this Plaxpak wash bottle dispenses contents in controlled thin stream.

Pre-measured dispensing — squeeze fills well in neck of this Plaxpak bottle.

Squeeze of Plaxpak bottle saturates sponge for uniform, neat application of hair coloring.

Tap water is demineralized quickly by this Plaxpak bottle combination.

THESE PLAXPAK

Polyethylene bottles vary widely in application, but they all have one thing in common — a squeeze by the user dispenses the contents neatly, quickly and controllably.

The "squeeze" has come a long way since the introduction of the Plaxpak bottle. Possibly it's just the action your next package should have to put your product over with a bang. Let us show you how the Plaxpak bottle can be applied to your product to make it easier, neater and more sanitary to use.

And remember that this amazingly versatile container is unbreakable, light in weight, inert to chemicals, and available in an almost infinite range of colors.

new brochure

Please write for our new booklet. It will help bring you up-to-date on the Plaxpak bottle's advantages and the facilities available to you at Plax.



PLAX CORPORATION

Subsidiary of Emhart Mfg. Co., WEST HARTFORD, CONN.
In Canada, Plax Canada, Ltd., Toronto — District Sales Offices: New York, Philadelphia, Chicago and other principal cities.

Plax® Blow-molded products made under U.S. Pat. No. 2128239, 2175053, 2175054, 2230188, 2230190, 2260758, 2283751, 2349176, 2349177, 2349178.



Paint That Moves Traffic

CHEMICAL PROBLEM...

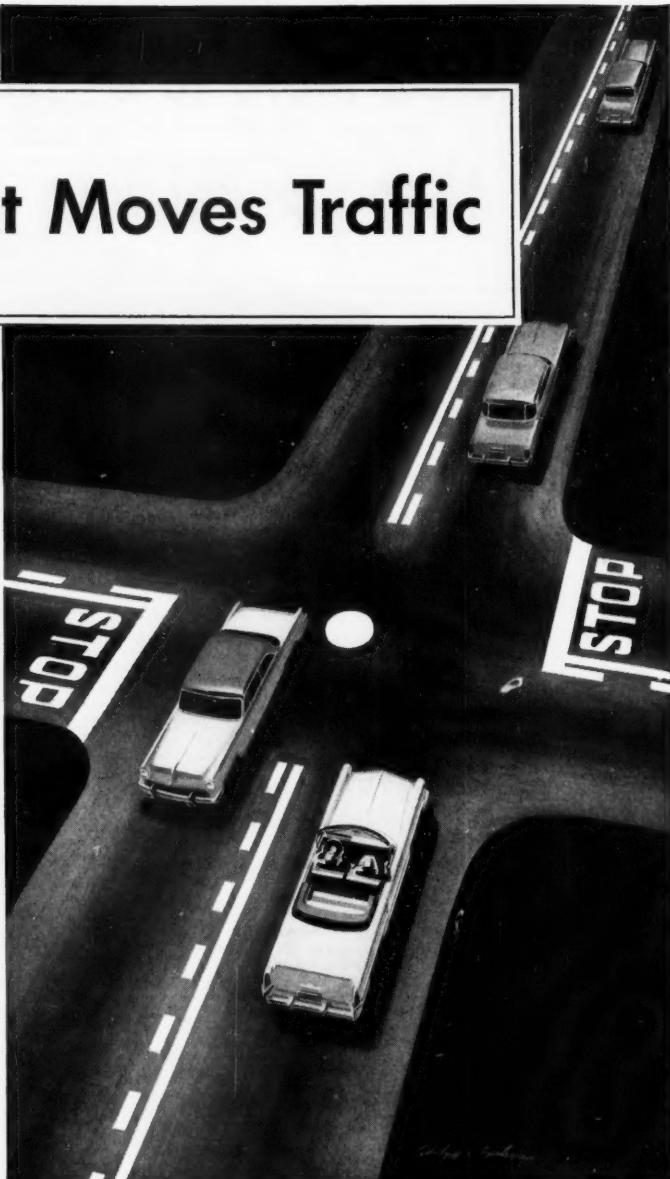
...to reduce traffic inconveniences caused by too frequent repainting of road markings.

SOLUTION...

...new-type traffic paints made with Parlon® (Hercules chlorinated rubber) and Pentalyn® (a Hercules resin). These paints dry in minutes, yet have exceptionally long road life. Where glass beads or other materials are mixed in the paint for added reflectance, the Parlon-Pentalyn combination also acts as the binder.

RESULT...

...highway maintenance departments report markings require repainting less frequently, which lowers costs and decreases traffic interruptions. The quick dry and durability of these traffic paints indicate why finishes made with Parlon are being used more and more to solve industrial maintenance problems—on all types of surfaces.



Hercules' business is solving problems by chemistry for industry . . .



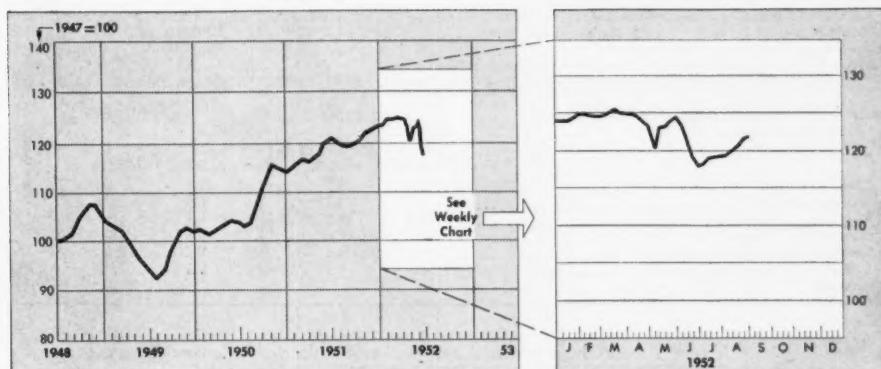
... soaps, detergents, rubber, insecticides, adhesives, plastics, paint, varnish, lacquer, textiles, paper, to name a few, use Hercules® synthetic resins, cellulose products, chemical cotton, terpene chemicals, rosin and rosin derivatives, chlorinated products and other chemical processing materials. Hercules® explosives serve mining, quarrying, construction, seismograph projects everywhere.

HERCULES

HERCULES POWDER COMPANY 992 Market Street, Wilmington, Del.
Sales Offices in Principal Cities

552-9

MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries

MARKET LETTER

"Dark, and getting darker," the label usually tagged onto cresylic acid held too long in inventory, is being used more and more to characterize the current cresylic market.

Imported (American Duty Free) material, especially, is feeling the needle of no demand. Importers point to some 25,000 gallons of German cresylic going a-begging at 70¢-72¢/gallon.

Some higher grade British acid is changing hands for about 80¢/gallon although the quasi-official price tag reads 85¢.

On the domestic front coal tar cresol producers' sentiments are unanimous—these tar acids are in the least short supply of all the aromatics. And petroleum acid isn't boiling along either, but prices are holding steady.

Most chemical process industries, however, are looking at the brighter side, hold high hopes for the immediate future. The Labor Day weekend usually puts a psychological period to traditional summer production interruptions, and many sales managers feel this year's holiday will also bring an end to "hand-to-mouth" inventory policies; chemicals consumers may break loose, increase buying.

The demand curves for nylon and cellophane are already pointing upward. Adiponitrile (a base for nylon) is pouring out at a record clip. The reason, of course, is increased demand for nylon.

Capacity output of cellophane is also in the offing at Du Pont's big Yerkes Works (Tonawanda, N.Y.). Production now running at about 87%, will be upped to 100%. Clear-cut implication: Cellophane consumers' inventories have been cut considerably.

And the gum market is firming up, too. Gum arabic was as high as 19¢/pound early this year, dropped to 14¢ recently, is now up to 15½¢ (Chicago). Price of gum tragacanth (No. 1 ribbon) is now pegged at about \$3.15/pound. It's a cinch, though, the Iranian situation will cause some price shifting.

Latest rubber consumption figures highlight the switch from natural to synthetic. Use of synthetic rubber in July amounted to 58,880 long tons, vs. natural rubbers' 32,500.

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	122.0	121.8	120.3
CHEMICAL WEEK Wholesale Price Index (1947=100)	102.4	102.4	107.0
Bituminous Coal Production (daily average, 1,000 tons)	1,600.0*	1,650.0	1,791.0
Steel Ingot Production (1,000 tons)	2,100.0*	2,050.0	
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	243.3	245.2	253.8
Chemical Process Industries Construction Awards (Eng. News-Record)	\$18,114,000	\$8,363,000	\$62,835,000

MONTHLY INDICATORS—FOREIGN TRADE (Million Dollars)

	EXPORTS			IMPORTS		
	June Last Month	Preceding Month	Year Ago	June Last Month	Preceding Month	Year Ago
Chemicals, total	65.1	69.5	93.0	19.5	19.0	24.7
Coal tar products	3.8	3.7	7.4	0.5	0.5	0.9
Medicines and pharmaceuticals	20.1	18.3	27.4	4.3	4.4	4.2
Industrial chemicals	9.8	11.6	17.5	4.5	3.6	9.7
Fertilizer and fertilizer materials	2.5	3.8	3.9	9.5	9.8	8.7
Vegetable Oils and Fats, inedible	2.7	4.3	13.2	7.1	7.9	7.7

*estimated

There's been less natural rubber available to industry because of Government stockpiling, but here's a safe bet: There will be more—and soon. The reason: Original U.S. natural rubber stockpile objective was 1½ million long tons. Six months ago the goal was in sight. By this week the project could be ready for the "Mission Accomplished" stamp.

Latest edition (No. 8) of DPA's bimonthly "List of Basic Materials and Alternates" indicates the extent of the easing chemicals supply situation (CW, August 2). There are 59 changes. But note this: Every change is to a less "critical" Classification—or removed from the list entirely.

The key to the list: Group I, materials in short supply; Group II, commodities that are in approximate balance with defense and essential civilian demand; Group III lists materials in fair to good supply.

From Group I to Group II: butadiene, monochlorotrifluoroethylene, parachlorophenol, sulfuric acid.

From Group I to Group III: dihydroxydichlorodiphenylmethane, naphthalene, toluene.

From Group II to Group III: alkyd resins, benzene, carbon tetrachloride, chloroform, ethanolamines, ethylene dichloride, ethylene glycol, ethylene oxide, isopropyl alcohol, maleic anhydride, melamine, melamine resins, naphthenic acid, paradichlorobenzene, paranitrophenol, perchlorethylene, phenolic resins, phosphate plasticizers, phthalic anhydride, polyethylene, polyethylene resins, polyester resins, refined sebacic acid, trichlorethylene, xylene.

Removed from the list: acetic acid, amyl acetate, amyl alcohol, borax, boric acid, carbon black, formaldehyde, iodine, lead oxide (red), litharge, methyl chloride, naphtha, orthophosphoric acid, pentaerythritol, phenol, phosphorus, propionic acid, quinoline, resorcinol, rosin, shellac, sodium hydrosulphite, styrene, succinic acid, sulfur chloride, tall oil, turpentine.

In the Miscellaneous listing DPA shows graphite (natural and crucible flake) rare earths, rutile slipping to Group II. All rubber classifications formerly in Group II, however, are now in Group III.

And echoing recent industry reports, the agency for the first time takes both copper and aluminum out of the "short supply" category, drops them into Group II.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending September 1, 1952

UP

	Change	New Price		Change	New Price
Linseed Oil, tc, FOB Minneapolis	\$.005	\$.162	Tung Oil, tc, NY005	.3875
Soybean Oil, crude, tanks, mills004	.119			

All prices per pound unless quantity is stated

Ask for our new price list effective August 1, 1952

wax

save this handy specification chart

Warwick Waxes—waxes of proved performance—offer you the broadest selection in the wax field. Whatever your product or your problem—for expert help on formulations, for samples, for technical data, our wax chemists are at your service. Get in touch with Warwick today...ask for our 1952 price list. Prompt delivery. Stocks in principal cities.

WARWICK WAXES

NAME OF WAX	MELTING POINT ASTM D-127-30	PENETRATION 100g/77°F/5 SEC.	COLOR N.P.A.	ACID NUMBER	SAPONIFICATION VALUE	TYPE
CARDIS® 314	184-189	4-6	4-5	13-15	45-50	EMULSIFIABLE PETROLEUM WAX
CARDIS® 319	180-185	5-7	4½-6	18-20	65-70	EMULSIFIABLE PETROLEUM WAX
CARDIS® 320	180-185	5-7	4-5	28-30	75-80	EMULSIFIABLE PETROLEUM WAX
CARDIS® 262	195-200	4-6	BROWN	14-16	40-45	SPECIALLY PROCESSED PETROLEUM WAX
FORTEX®	190-200	3-5	2½-3½	0.0	0.0	MICRO-CRYSTALLINE HARD AND PLASTIC
MEKON® B-20 A-20 Y-20	190-195 190-195 190-195	3.5 3.5 3.5	BROWN-BLACK AMBER-6 MAX. YELLOW-3-3½	0.0	0.0	MICRO-CRYSTALLINE HARD AND BRITTLE
WARCO WAX 180	180-185	4-7	WHITE	0.0	0.0	MICRO-CRYSTALLINE HARD AND BRITTLE
WARCO® WAX 150-A	145-155	15-20	YELLOW 1-2	0.0	0.0	MICRO-CRYSTALLINE PLASTIC
WARCOSINE	145-150	15-20	WHITE	0.0	0.0	MICRO-CRYSTALLINE PLASTIC
PARAFFIN	131-133	FULLY REFINED				CRYSTALLINE
SUGAR CANE WAX	174-178	13 WAX	TAN	23-28	65-77	VEGETABLE WAX

WARWICK

WAX Company, Inc., Subsidiary



10TH STREET AND 44TH AVENUE, LONG ISLAND CITY, NEW YORK

Low cost, pure fatty alcohols open new vistas

Today, as never before, the demand is for uniformity in chemicals for the processing industries. And today, as never before, it is possible for chemists to specify fatty alcohols that adhere to their exacting requirements from lot to lot. The CACHALOT brand name covers the most extensive line of higher alcohols *commercially available in tonnage lots of controlled purity*. Your chemists may use these cetyl, oleyl, and stearyl alcohols in many ways—as esters, aldehydes, sulfonates, emulsifiers, intermediates. You will find CACHALOT listed in Chemical Materials Catalog. For technical data and information on today's low prices, write M. Michel and Company, Inc., 90 Broad Street, New York 4, N. Y. Over twenty years a basic supplier to chemical manufacturers, their trade name for the world's finest fatty alcohols is

Cachalot®



DRUGS
CHEMICALS
OILS
WAXES

GLYCINE N. F.
(AMINO ACETIC ACID)

MONOCHLORACETIC ACID

SODIUM CHLORACETATE

SODIUM ACETATE ANHYDROUS

ROSENTHAL BERCOV CO., INC.

25 East 26th St., New York 10, N. Y.

CABLE ADDRESS "RODRUG"

M A R K E T S

THIS MUCH will come from HERE



190,000,000 gallons
105,000,000 gallons
48,000,000 gallons
343,000,000 gallons

Coke Oven and Drip Oils
Petroleum
Import Equivalent
Total Available



THIS MUCH WILL GO INTO



150,000,000 gallons
70,000,000
25,000,000
21,000,000
17,000,000
15,000,000
9,000,000
42,000,000
349,000,000

Styrene
Phenol
Nylon
Aniline
Synthetic Detergents
Maleic Anhydride
DDT
Others*
Total

*Includes Diphenyl, Di-monochlorobenzene, BHC, etc.

NEXT YEAR'S BENZENE: The figures pose the question . . .

Is Benzene Really Short?

At times the National Production Authority and the chemical process industries don't see eye to eye regarding expansion goals, (e.g., penicillin, CW, July 26), but when the theme is benzene, both groups sing in harmony, "We want more." And there will be a good deal more benzene produced—and needed—if:

- Coke-oven benzene producers can maintain, or exceed, the current 185-190 million gallons-a-year pace.

- The petroleum industry completes construction of all its planned (and the Government's called-for) benzene production facilities.

- Estimated benzene requirements materialize; including, of course, continued booming of consumption by styrene and phenol.

Coal tar benzene capacity at the moment is estimated at about 180 million gallons a year. Though efforts have been made to increase output from this source, it is generally conceded by industry-wise people that production of coal-derived benzene will hit its ceiling, 190 million gallons/year, by 1953. This is nevertheless a whopping increase over the 135 million gallons which was estimated, as late as 1940, as the potential benzene from coal tar.

The Picture Then: At the time (prior to World War II) this supply was ample for all U.S. needs—and the price was relatively low.

But by 1949 there was an upheaval in the benzene market. By that year, too, nearly 170 million gallons of chemical-grade benzene was expected to be forthcoming. Then a series of circumstances literally forced the petroleum industry to pitch in and produce the material:

- The coal and steel strikes of 1949 resulted in a loss of some 40 million gallons.

- The skyrocketing plastics industry called for more and more phenol and polystyrene.

- Synthetic detergents began to grow by leaps and bounds.

All these demanded increased quantities of benzene. Dow, Monsanto, Du Pont—the largest consumers—scratched the world for supplies of benzene. By the following year (1950) an 85¢/gallon price for foreign benzene was not uncommon. Even domestic coal tar benzene prices firmed rapidly, jumping from 22¢ to about 35¢ a gallon.

Then the Korean incident brought about reactivation of the U.S. synthetic rubber program—adding about

a 35 million gallon benzene requirement to cut into an already short supply.

At that time representatives of all the benzene-consuming industries in the U.S. (under DPA sponsorship) took a long hard look at the future benzene supply-demand picture, arrived at a unanimous conclusion: There wasn't going to be enough for a long time.

The government scanned the dim forecast, immediately came up with a support program in the form of 5-year accelerated amortization for petroleum benzene producing facilities. The original objective was 85-90 million gallons of petrobenzene a year.

Pioneers like Pan American Refining and Shell Oil had, in the meantime, been doing much development work on aromatics from petroleum, were able to jump into the breach almost immediately by converting wartime toluene facilities to benzene.

Since then other oil companies have joined the parade—Continental, Standard (Ind.), Standard (Calif.), Atlas Processing, Standard (N.J.).

... And Now: Estimates of petroleum benzene production by all methods (Hydroforming, Platforming [developed by Universal Oil Products], Atlantic Refining's platinum catalyst process, Houdry Process Corp.'s Houdriforming) indicate that some 105 million gallons a year will be available from this source by next year.

Add to this the import equivalent, about 48 million gallons, and it becomes clear that the gap between coal tar benzene and total demand will just about be bridged by the end of 1953.

Poser: But one big question pops up now and then to plague would-be petrobenzene producers. Is there really a shortage of benzene?

Facts, figures and forecasts seem to say, yes. But one old-line producer tells CW, "There is a shortage of benzene—but only of the lower-cost coal tar product."

The reasoning behind this statement gives pause for thought. During the recent 8-week steel strike the U.S. lost some 30 million gallons of coke-oven benzene. And that loss did not put a single consumer in a spot to run for aid to petrobenzene producers.

Last year's imports (40 million gallons) and petrobenzene output (25 million) evidently was enough to fill consumers' inventories. There was enough—with lessened demand—to carry consumers through what should have been a tight-belt period. Producers complained as late as two months ago that "benzene was running out of their ears." Some petroleum benzene producers are even saying that today. One result of this line of thinking may be scuttling of some of the 18 petroleum benzene projects now in the planning stage.

For it's a fact that almost every gallon produced from coal tar is contracted for; buyers are still looking for the cheaper material, turning away from the higher.

Price-Tag Differential: Price seems to be the dominant factor in the entire benzene market. While the petroleum industry would find it extremely uneconomic to lower its benzene selling price from the current 55¢ (and up) figure because of high operating costs, the coal tar producers are caught in a ceiling price squeeze that keeps their product down to a 32¢-37¢ level.

This artificial disparity in prices urges attempts by some consumers to wangle directives out of Washington to get the lower-cost benzene.

Safe Bet: But despite the high-low prices; regardless of temporary dips and surges in benzene supply/demand curves, this much is certain: Over the long haul, production and consumption of benzene will inexorably rise. For it is a fact, too, that many of the benzene end-uses we know now were undreamed of ten years ago, and market researchers can only guess what the pattern will be a decade from now.

Government Needs

Bid Closing	Invitation No.	Quantity	Item
General Stores Supply Office, 700 Robbins Avenue, Philadelphia 11, Pennsylvania			
September 15	2-1133-B	80000 sf	Glass fibrous thermal batts insulating blankets Mil. Spec. MIL-1-942A.
September 16	3-1134-B	7020 ea	Extinguishers fire chemical carbon tetrachloride portable hand operated Fed. Spec. O-F-351.
Commandant of the Marine Corps, Washington, D.C. ATTN: Supply Department, Procurement Section			
September 17	122B	5317 ea	Chlorination, outfits, joint Army, Navy spec. JAN-C-97 with exception
Business Service Center, General Services Administration, Region 9, 1031 South Broadway, Los Angeles 15, California			
September 8	LA-146-53	4200 lbs	Calcium hypochlorite, tech. appr. 100 lb. drum, fed. spec. O-C-114



FRUSTROSITY* CASE No. 32:

Mr. Thixotrouble is having "peculiar behavior" problems. If he had a 1952 Brookfield Viscometer at hand, he would know all the viscosity answers — could make determinations directly in centipoises in a matter of seconds in lab, plant, or both. Whether the materials you work with are Newtonian or non-Newtonian, you owe it to your wife, customers and co-workers to get up-to-date information on Brookfield Viscometers adaptable to any problem from less than one to 32,000,000 centipoises. Ask your Lab Supply House or drop a line to Dept. N, Brookfield Engineering Laboratories, Inc., Stoughton, Mass.

*FRUSTROSITY is that frustrated condition a man gets into when his problem is Viscosity Determination or Control and he hasn't asked BROOKFIELD.



His business paper . . . of course

No man who takes his job seriously takes his business paper lightly. The Best Informed Men in your Field read every issue . . . straight through. They can't afford not to. Matter of fact, who can? You need the continuous touch with facts, news and "how-to" that only your business paper provides. Cover-to-cover reading makes you one of the Best Informed Men in your field, too.

Chemical Week

•••••
One of a series of ads prepared by
THE ASSOCIATED BUSINESS PUBLICATIONS

**It's what we
TAKE OUT
that makes the
difference ...**

**... Between Stability
and Instability**

Our objective is to remove everything from Stearic Acid that is not good, clean fatty acid. To this end we offer Stearic Acid with **0.0% UNSAPONIFIABLES**

A sample will show you how far we have progressed in the manufacture of Stearic Acid free of unsaponifiables, trace metals, esters, etc.

*Send for free booklet
"Fatty Acids in Modern Industry"*

A. GROSS & Company

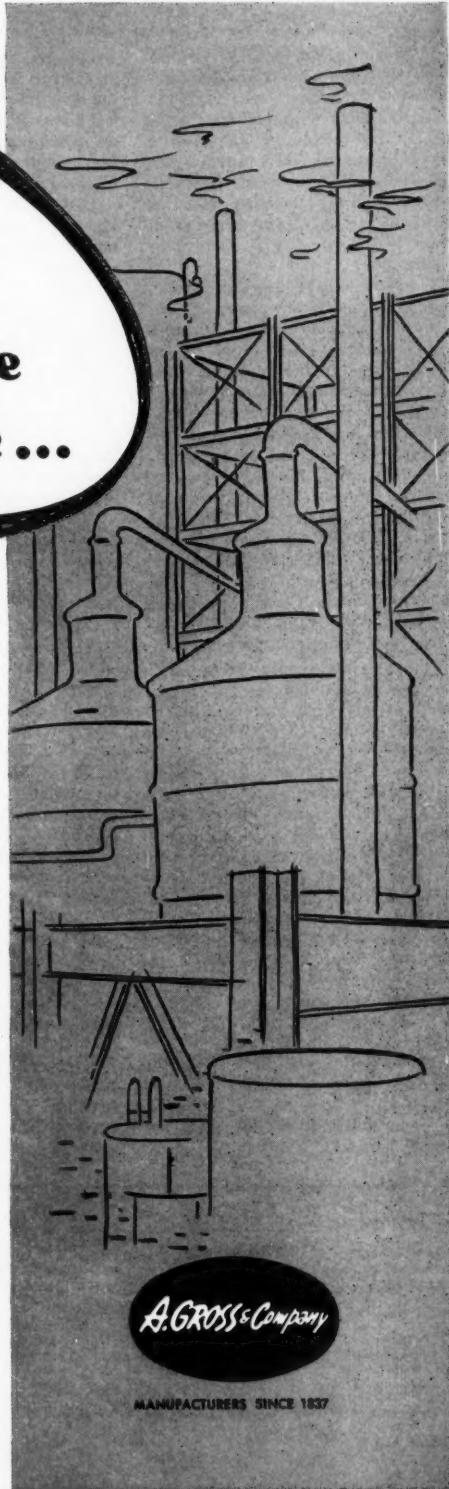
295 MADISON AVE., NEW YORK 17, N. Y.

FACTORY: NEWARK, N. J.

DISTRIBUTORS

George Mann & Co., Inc.
Providence, 3, R.I.
J. W. Stark Co.
Detroit 1, Mich.
Charles Albert Smith, Ltd.
Toronto 3, Canada
Braun-Knecht-Heimann Co.
San Francisco 19, Calif.
Thompson Hayward Chemical Co.
Kansas City 3, Mo. (and
branches)
Ducros & Co.,
Cleveland 15, Ohio
Atlantic Equipment & Chemical Co.
Atlanta, Ga.

James O. Meyers & Sons
Buffalo, N.Y.
J. C. Ackerman Co.
Pittsburgh, Pa.
Baker Industrial Oils Co.
Philadelphia 6, Pa.
Moreland Chemical Co.
Spartanburg, S.C.
Drogas Y Productos Quimicos
Mexico 8, D. F.
Braun Corp.
Los Angeles 21, Calif.



A. GROSS & Company

MANUFACTURERS SINCE 1837

SPECIALTIES . . .

Load off Accountants

Recent amendment to GOR 3 exempts some chemical specialties, drugs, cosmetics from price control during preliminary sales.

Ruling means less paperwork for both OPS and manufacturer when a new product is being introduced.

A break for the chemical specialty maker and drug firms is amendment 5 to the OPS's General Overriding Regulation 3.

Now exempted from price controls: The initial \$25,000 manufacturers sales of cosmetics or chemical specialties by small (defined as firms with total gross annual sales of \$250,000 or less) companies; new chemicals and drugs until sales reach \$1,000; chemicals and drugs in experimental production until sales reach \$25,000, with a provision for possible extension.

New chemicals, drugs, chemical specialties, and cosmetics are defined as those not offered before January 26, 1951. Experimental chemicals naturally are not limited by this date, and previous provisions of GOR 3 exempted certain reagent chemicals, butadiene from non-petroleum sources used in synthetic rubber manufacture, a variety of fertilizer chemicals, and AEC-produced uranium compounds.

Experimental Expense: "It was about time," one specialties maker pointed out, "the government recog-

nized that we have limited resources to introduce a new product. It sometimes takes the OPS longer to make a ruling than it does for us to discover the damn stuff won't sell at any price."

It was with just that in mind that the amendments were authorized. In the case of experimental chemicals, cognizance was taken of the frequently expensive research programs necessary to develop them. GOR initially permitted the first \$1,000 sales of an experimental chemical to be controlled; this has proved to be far too low, and the amount has been boosted to \$25,000 (section 2, para [c] GOR 3 sets forth procedure to extend this).

GOR Glossary: The new amendments require a definition of terms. Section 5 explains:

- "Chemical specialties" includes products for institutional or household

purposes, such as (but not limited to) cleaning and sweeping compounds, disinfectants, household insecticides and the like. Specialties for industrial use are typified as those employed in the processing or treatment of textiles, leather, paper and pulp, rubber, ceramics and petroleum, as well as for use in metal refining and working, electroplating, laundry and dry cleaning operations, building and plant maintenance and similar industrial operations.

- "Drug" means any proprietary drug product, and any drug and medicine of the kind listed in Major Group 65, Standard Commodity Classification, Technical Paper No. 26, Vol. 1, U.S. Gov't. Printing Office, 1943, except those commodities which generally sell for non-medicinal uses.

- "Cosmetic" is defined as any product intended to be rubbed, poured, sprinkled or sprayed upon or introduced into or otherwise applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance. Soaps aren't regarded as cosmetics, but shaving soaps and liquid shampoos are.

Two-Way Ease: In addition to lift-



WIDE WORLD

Make-Believe Blizzard

SNOW SCENE production for television has been simplified by use of aerosol-dispensed artificial snow at NBT. The acrylate snows have proved a boon to video producers, who used to depend upon cornflakes.

SODIUM BICARBONATE, U.S.P.

Specialized Grain Sizes

MONOHYDRATE of SODA

SAL SODA

Technical Service

CHURCH & DWIGHT CO., Inc.

70 Pine Street

New York 5, N.Y.

Phone Digby 4-2181

tracers...to opportunities in the chemical

MANAGEMENT SERVICES

Aries

Technical & Economic Surveys
Design Engineering—Cost reduction
New Product Development—Market Research
Sale & Licensing of New Processes
Write for Leaflet 0
R. S. ARIES & ASSOCIATES
400 Madison Ave., New York 17, N. Y.

EVANS

Chemical Research—Processes—Products
Development Projects
Commercial Laboratories—Plant
Mechanical & Optical Sections
Ask for new Scope Sheet C
listing over 100 of our activities
EVANS RESEARCH & DEVELOPMENT CORP.
250 East 43rd St., N. Y. 17, N. Y.

D. H. KILLEFFER

- TECHNICAL PUBLICITY
- TECHNICAL SALES LITERATURE
- ANNUAL REPORTS
- COMPANY HISTORIES
- BIOGRAPHIES
- TECHNICAL GHOST WRITING

188 Westchester Avenue Tuckahoe 7, N. Y.
Telephone: SPencer 9-6821

JAMES P. O'DONNELL

Engineers
CHEMICAL PROCESS PLANTS
Design—Procurement—Construction Supervision
39 Broadway, New York 6

HILLARY ROBINETTE, Jr.

Chemical Consultant
TECHNICAL AND ECONOMIC SURVEYS
PRODUCT DEVELOPMENT
CHEMICAL MARKET RESEARCH
P. O. Box 607 Ardmore, Pa.
Telephone: Ardmore 6-4575

SIRRINE

ENGINEERS
Plant Design & Surveys covering Chemical, Electrochemical and Metallurgical Production; Industrial Waste Disposal; Water Supply & Treatment: Analyses & Reports
Greenville South Carolina

ROGER WILLIAMS, INC.

- ENGINEERING ECONOMICS
- MARKET RESEARCH
- TECHNICAL WRITING
- TECHNICAL BOOKLETS

Write for "Profit Evolution"
148 East 38th Street, New York City 18
Murray Hill 5-6508

BUSINESS OPPORTUNITIES

Sixty year old nationally known process equipment company interested in establishing process design subsidiary. Will consider purchase or affiliation with existing company or will form with right man. BO-5171, Chemical Week.

Wanted

WILLING TO BUY

outright or a controlling interest, small going chemical company making marketable products. Full particulars in writing to:

A. C. VILLAGRAN
82 Beaver St., New York 5
All information will be treated in strict confidence.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

EQUIPMENT—used-surplus

For Sale

Autoclaves, Steel, Hor. 66"x14'7", First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Calender, New 6x12", Johnson Joints, Complete. Eagle Industries, 108 Washington St., NYC.

Centrifugal 36"x40" Bird, Continuous, Consolidated Products, 18 Park Row, N.Y. 38, N.Y.

Centrifugals, Bird 48"; Rub. Covered, First Machinery, 157 Hudson St., N.Y. 13, N.Y.

Dryer, Vacuum Shelf, 20 shelves, 59 x 78, pump, cond. (6). Consolid'd. Prod., 18 Pk. Row, N.Y. 38.

Dryers, 2 Btvk 32x90 dble. drum, 55 accessories, comp. Eagle Industries, 108 Washington St., NYC.

Dryers, 2 Stainless Drums; 5"x10", First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Extractors—Fletcher—55 New 30" & 40" Equipment Clearing House, Inc. 289-10 St., Bklyn 15.

Filter Press, 18" x 18", Sperry, Iron, P & F, 11 chambers (20). Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, 30"x30", iron, Sperry, steam heated, 30 chambers. Consolidated Products, 18 Park Row, N.Y. 38, N.Y., Barclay 7-0600.

Filter Press, 30" x 30", Aluminum, 45 Chambers. Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, 42" x 42", Iron, Shriver, 18, 27, 36, 54 chambers (12). Consolidated Products, 18 Park Row, N.Y. 38.

Filter Press, all sizes and types. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

Granulator, Allis Chalmers, Ball, 4'6"x7', iron lined. Used 100 hours. Consolidated Products, 18 Park Row, New York 38, N.Y. BA 7-0600.

Heat Exchangers-Ross Type BCP-18 BWG Cupro-Nickel tubes. 6 ea size 1060 copper shell, 7 ea size 1024 steel shell. Ampower Corp., 50 Broad Street, N.Y.C.

Kettles, 5/5, 300 gal. and 200 gal., 1002; W. P. Consolidated Products, 18 Park Row, N.Y. 38.

Labeler, World Model CH, press type, very good cond. Process Industries, 305 Powell St., Brooklyn 12, N.Y.

Mill New 6x12: Johnson Joints, Complete. Eagle Industries, 108 Washington St., NYC.

Mills, Raymond #5047 & 5057, High Side Roller, (2). Consolidated Prod., 18 Park Row, N.Y. 38.

Mills, Trevier tube, 5"x22", 5"x20", 4'6"x18'6", 4"x13", stone lined, pebble charge (4). Consolidated Products, 18 Park Row, New York 38, N.Y.

Mixer Lab 3 qt. cap. 1/4 HP, Readco. Eagle Industries, 108 Washington St., NYC.

Mixer, Lab., BP Vacuum, 7/2 gal. jktd., MD. Complete, Eagle Industries, 108 Washington St., NYC.

Mixers, 700 gal. Turbo, Simplex, jktd. (2). Consolidated Products, 18 Park Row, N.Y. 38.

Mixers, horiz. ribbon, 14'x7'6"x6", jktd. 450 cu. ft. (2). Consolid'd. Prod., 18 Pk. Row, N.Y. 38.

Pebble Mills; 8'x8', Porcelain lined. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Pebble Mills 10 gal. to 800 gal., porcelain lined, 20. Consolidated Products, 18 Park Row, NY 38.

Reactors, Pfaudler jktd. 400 Ga. First Machinery Corp., N.Y. 13, N.Y.

Tablet Press, No. 5 1/2, Colton, 3" maximum. Consolidated Products, 18 Park Row, N.Y. 38.

Tanks, Alum, Pressure—330 and 480 gal. Perry Equipment, 1415 N. 6th St., Phila. 22, Pa.

SPECIAL SERVICES

Processes

Custom Compounding And Blending

Pacific Coast chemical and soap plant now manufacturing exclusively for U.S. Government has substantial surplus facilities for soap production and/or oil chemical compounding. A desire to manufacture for Eastern producer who is interested in realizing freight saving by buying private formulas manufactured on West Coast.

Spazier Soap & Chemical Co.
1619 20th Street, Santa Monica, Calif.

Custom Pulverizing

Heat sensitive materials: Complex organics, Waxes, Plastics, Botanicals and materials subject to rapid oxidation.

Liquid Nitrogen Processing Corp.
451 Booth St., Chester, Pa.
Phone: CH 3-7115

EMPLOYMENT

Positions Vacant

Unusual opportunity for plastics chemist

For Research and Product Development

Should be experienced in polyvinyl chloride compounding. An excellent opportunity to progress with a well established and rapidly expanding California organization having a healthy balance of government contracts and commercial business to assure excellent future prospects. Employees of this organization have knowledge of this advertisement. Give full particulars in letter—age, experience, education, references, personal history, salaries received, salary expected and comments on willingness to move to California. Reply:

Box 2393 Terminal Annex
Los Angeles 54, California

Young man wanted with some College chemistry

to conduct correspondence, assist in purchasing, supervising, filing and handle other office work in connection with use of heavy chemicals. Permanent position with established wholesale firm in Mid-South. Give full information, including age, education, experience, salary basis, etc. P-5242, Chemical Week.

Positions Wanted

Brazil: Technical Sales-Market Development

American Ch. enginner, business background, 30, single, connections. Portuguese, Spanish perfectly. 6 years: Industrial economics, process & packaging equipment, instrumentation, adhesive, pharm. & food specialties, etc. Administrative record, top references. Ability, character & personality above average. Aces Employment Agency, R. 7 de Abril 264 (s601-A) Sao Paulo.

Government Contracts—Experienced mature cost man on bids, specifications, traffic, accounting procedures, chemicals, pharmaceuticals, tablets, insecticides. Desires position New York metropolitan area. PW-5258, Chemical Week.

Selling Opportunity Wanted

Manufacturers' representative—distributorship, Carolinas or South; 15 yrs. top company chemical mfg., sales management; also pulp, paper and hard goods. Character, ingenuity and aggressiveness ability. RA-5222, Chemical Week.

process industries

For Sale

Tanks, S/S, from 30 gal. to 5700 Gal. Perry Equipment Corp., 1415 N. 6th St., Phila. 22, Pa.

Tanks, 2 10000 gal. 55 Storage, excel. Cond. Eagle Industries, 108 Washington St., NYC.

Tanks, S.S. Storage & Mixing, all capacities. Process Industries, 305 Powell St., Brooklyn 12.

Tanks, 6500 gal. capacity, steel storage, recovered from dismantled tank cars, coated & non-coated. Marshall Railway Equipment Corp., 50 Church St., N.Y. 7, N.Y.

Wanted

Wanted at Once

Chemical Equipment for Defense Plant Work

Autoclaves Kettles Mixers
Centrifuges Pressers Pulverizers
Dryers Tanks
Filters

Interested in complete plants—either now operating or idle. Give full particulars when writing.

W 3117 Chemical Week

330 W. 42nd St., N.Y. 36, N.Y.

Machinery, Chemical and Process. Everything from single item to complete plant. Consolidated Products, 18 Park, N.Y. 38.

DEALERS in used-surplus

Consolidated Products Co., Inc.

Visit Our Booth 51

National Chemical Exposition

September 9-13

Chicago Coliseum

Largest and Oldest Dealers
in Rebuilt Process Machinery

18 Park Row, New York 5, N.Y.

Barclay 7-0600

Shops: 331 Doremus Ave., Newark 2, N.J.

Your FIRST Source

NEW YORK'S
LARGEST STOCK
RENTAL-PURCHASE PLAN

FIRST MACHINERY CORP.
157 Hudson St., N.Y. 13
Phone WORTH 4-5900

R. Gelb & Sons, Inc.

Largest stock of used chemical equipment in the United States
66 Years of Leadership

R. Gelb & Sons, Inc.
Union, N.J.
Unionville 2-4900

CHEMICALS

Wanted

Chemical Service Corporation

WANTED — SURPLUS
Chemicals, Plasticizers, Solvents
Drugs, Pharmaceuticals, Oils
Pigments, Colors, Waxes, etc.

CHEMICAL SERVICE CORPORATION
96-02 Beaver Street, New York 5, N.Y.
HAnover 2-6970

SPECIALTIES

ing a burden from the small manufacturer, the amendment (effective just last month) saves the OPS the trouble of establishing ceiling prices of commodities which are not particularly part of the stabilization program.

When sales of specialties or drugs have exceeded the control-free permitted volume, the manufacturers must of course establish a ceiling price and observe the record-keeping requirements of the applicable regulations.

For Glamour? Latest product packaged in polyethylene spray bottles is Wella Color Streak hair powder. The chic effect of a metallic stripe in the hair is achieved by spraying the powder from a Millsplastic bottle (Elmer E. Mills Corp., Chicago).

Welcomed in Elkin: Capitalized at \$50,000, Technic Industries has obtained a certificate of incorporation and will deal in chemicals in Elkin, N.C.

Catalin Expansion: Thomasville, N.C. plant of the Catalin Corp. of Amer-

ica is being enlarged; one warehouse has been completed, further expansion is planned.

Bollworm Killers: The new organophosphate pink bollworm killers that the USDA has uncovered are far from ready for commercial availability, the USDA cautions. Though the chemicals are proved effective, tests are incomplete regarding possible toxic residues, and proper methods and amounts of dosages.

Parathion Caution: The Florida Citrus Experiment Station has re-emphasized its warnings concerning use of parathion. Fearing that use of the chemical may be restricted, and that industrial insurance rates may rise sharply, Dr. Camp, vice director of the station, has issued a list of cautions. And he pointed out that many cases diagnosed as parathion poisoning may well be something else; he urges tests on the cholinesterase level in the blood of the patient. (Cholinesterase, an enzyme affecting nerve impulses, is destroyed by parathion.)



Tress Treatment Laboratory

TESTS ON previously unwaved human hair is part of the Toni Co.'s research program on hair waving preparations. In new laboratories dedicated last week, technician Florence Williams checks the efficacy of a new Toni-developed hair cosmetic. The

new labs, adjacent to the firm's offices in Chicago's Merchandise Mart, occupy 10,000 sq. ft. Over \$600,000 is budgeted for research this year, principally for physical and chemical study of human hair and skin and the effects on them during various treatments.

BOOKLETS . . .

Chemicals

Synthetic Organic Chemicals

160-p. edition of the book "Synthetic Organic Chemicals" contains information on over 250 of Carbide and Carbon's products, and covers the principal groups of organic chemicals. Tables on physical properties, chemical characteristics, specifications, and shipping data are included. Carbide and Carbon Chemicals Co., 30 E. 42 St., New York 17, N.Y.

Carbon Black Pigments

16-p. booklet intended to designate the proper carbon black for a particular technical demand. Types, electrical properties, testing procedures, and technical data are included. Godfrey L. Cabot, Inc., Special Blacks Division, 77 Franklin St., Boston 10, Mass.

Industrial Chemicals

4-p. technical data sheet gives chemical formulas, molecular weights, boiling points, solubilities, etc. of alcohols, amines and ammonia, esters, nitroparaffins, and other products. Commercial Solvents Corp., 260 Madison Ave., New York 16, N.Y.

Nitroparaffins

4-p. technical data sheet entitled "Handling of the Nitroparaffins" contains flash points of liquids and limits of flamma-

bility of vapors in air, toxicity, stability, and other topics. Commercial Solvents Corp., 260 Madison Ave., New York 16, N.Y.

Aniline Salt

12-p. booklet describes aniline salt in pure crystal form. Types, uses, and applications are discussed and recipes for each dye are given. Calco Technical Bulletin No. 821, American Cyanamid Co., Calco Chemical Division, Bound Brook, N.J.

Equipment

Vacuum Processing

12-p. catalog entitled "Complete Vacuum Processing Systems" pictures and describes types of vacuum equipment used in industrial processes. Included are: rotary vacuum dryers, vacuum shelf dryers, and vacuum pumps. Request catalog No. 730, F. J. Stokes Machine Co., 5500 Tabor Rd., Philadelphia 20, Pa.

Dust Filter

8-p. brochure describes in detail the new Sly Dynaclone dust filter, designed for the continuous process industries where uniform suction at all dust points is essential. Complete engineering data, hints on the engineering of dust control problems, and other aids are included.

Request bulletin No. 102, W. W. Sly Manufacturing Co., Cleveland 2, O.

Multi-Purpose Hose

8-p. pamphlet describes "Basic-Five," color-coded, multi-purpose industrial base line. Details of construction, sizes, lengths, pressures, recommended coupling and uses for the new hose line are discussed. Thermod Co., Trenton, N.J.

Worm Gear Motor

8-p. bulletin on right-angle type GW Syncogear motor. Mounting, alignment assurance, and other general characteristics are included. Complete with colored illustrations. U.S. Electrical Motors, Inc., Box 2058, Los Angeles 54, Calif.

Feeding Table

2-p. bulletin on "Hydraulic Strip and Sheet Feeding Table" describes advantages of equipment, specifications, and application photographs. Bulletin 262, The Raymond Corp., 5594 Madison St., Greene, N.Y.

Bag Loader

4-p. brochure describes bag flattener, pallet loader, and elevator. The principle and method of operation of the machine, advantages, and abilities are listed. Complete with illustrations. Power-Curve Conveyor Co., P.O. Box 1146, Denver, Colo.

CHEMICAL WEEK

• ADVERTISER'S INDEX • SEPTEMBER 6, 1952

AMERICAN ALKYD INDUSTRIES	23	GENERAL AMERICAN TRANSPORTATION CORP.	39
Agency—C. J. Herrick Assoc.		Agency—Weiss & Geller, Inc.	
AMERICAN MINERAL SPIRITS CO.	46	GLORE FORGAN & CO.	74
Agency—Leo Burnett Company, Inc.		Agency—Albert Frank-Guenther Law, Inc.	
AMERICAN OPTICAL CO.	12	GREAT LAKES CARBON CORP.	7
Agency—Sutherland-Abbot, Advertising		Agency—Davis Parsons Inc., Adv.	
ANTARA CHEMICALS, DIV. OF GENERAL DYE&STUFF CORP.	3rd Cover	GROSS & COMPANY, A.	64
Agency—J. Hayden Twiss, Advertising		HARDESTY CHEMICAL CO., INC., W. C.	44
ARCHER, DANIELS, MIDLAND CO.	32	Agency—J. Hayden Twiss, Advertising	
Agency—The Bayless-Kerr Co.		HARSHAW CHEMICAL CO.	28
ASHCRAFT WILKINSON CO.	42	HERCULES POWDER CO.	58
Agency—Liller, Neal & Battle, Advertising		Agency—Fuller, Smith & Ross, Inc.	
AUTOMATIC SPRINKLER CORP. OF AMERICA	45	HEYDEN CHEMICAL CORP.	Back Cover
Agency—The Robert A. Joyce Co.		Agency—Sommers-Davis, Inc.	
BAKER CASTOR OIL CO.	27	HUDSON PULP & PAPER CORP.	82
Agency—Samuel Croot Company, Inc.		Agency—Robertson Manufacturing Co.	
BARRETT DIVISION, ALLIED CHEMICAL & DYE CORP.	3	KESSLER CHEMICAL CO., INC.	76
Agency—Anderson & Cairns, Inc.		KEWAUNEE MANUFACTURING CO.	756
DEMIS BROS., BAG COMPANY	47	Agency—Eggers & Smith Advertising, Inc.	
Agency—Gardner Advertising Co.		MGRAW-HILL BOOK CO.	53
BERKSHIRE CHEMICALS, INC.	54	MENTE & COMPANY, INC.	88
Agency—J. Hayden Twiss, Advertising		M. MICHEL & COMPANY, INC.	182
BROOKFIELD ENGINEERING LABS., INC.	763	MIXING EQUIPMENT COMPANY, INC.	33
Agency—F. P. Walther Jr., & Assoc.		Agency—Charles L. Rumrill & Co., Inc.	
CARBIDE & CARBON CHEMICALS CO., A DIVISION OF UNION CARBIDE & CARBON CORP.	36	MUTUAL CHEMICAL CO., OF AMERICA	8
Agency—J. M. Mathes, Inc.		Agency—J. Hayden Twiss Advertising	
CHEMICAL CONSTRUCTION CORP.	18	NATURAL PRODUCTS REFINING CO.	48
Agency—Michel-Cather, Inc.		Agency—Michel-Cather, Inc.	
CHURCH & DWIGHT COMPANY, INC.	65	PFIZER & CO., INC., CHARLES	41
Agency—J. Walter Thompson Co.		Agency—McManus, John & Adams, Inc.	
COLUMBIA-SOUTHERN CHEMICAL CORP.	31	PLAX CORP.	57
Agency—Ketchum MacLeod & Grove, Inc.		Agency—The Charles Brunelle Co.	
COMMERCIAL PETROLEUM & TRANSPORT CO.	B56	PRATER PULVERIZER CO.	86
Agency—Laughlin-Wilson-Baxter & Persons, Adv.		Agency—Simmonds & Simmonds, Inc.	
CORN PRODUCTS REFINING CO.	B63	RHEEM MANUFACTURING CO.	17
Agency—J. Hayden Twiss, Advertising		Agency—Campbell-Ewald Co., Inc.	
EASTMAN KODAK, D.P.I. VITAMINS DIV.	55	ROSENTHAL BERROW	862
Agency—Charles L. Rumrill & Co., Inc.		SHEFFIELD FARMS CO.	40
ERIEZ MANUFACTURING CO.	11	Agency—N. W. Ayer & Son, Inc.	
Agency—John Mather Lupton Co., Inc.		SHELL CHEMICAL CORP.	2nd Cover
GAYNER GLASS WORKS	20	Agency—J. Walter Thompson Co.	
Agency—Sommers-Davis, Inc.		TEENNESSEE PRODUCTS & CHEMICAL CORP.	43
TEXAS GULF & SULPHUR CO.		Agency—The Griswold-Eshleman Co.	
Agency—Sanger Funnell		TEXAS GULF & SULPHUR CO.	52
UNION CARBIDE & CARBON CORP.		Agency—Sanger Funnell	
Agency—J. M. Mathes, Inc.		UNION CARBIDE & CARBON CORP.	36
		Agency—J. M. Mathes, Inc.	

ADVERTISING STAFF

ADVERTISING SALES MGR. . . B. E. Sawyer

BUSINESS MANAGER ... Albert E. Weis

Atlanta 3 ... Ralph C. Maultby, 1521 Rhodes-Haverty Bldg., Walnut 5778-2383

Chicago 11 ... Alfred D. Becker, Jr., Steven J. Shaw, 520 N. Michigan Ave., Whitehall 4-7900

Cleveland 15 ... Vaughan K. Dissette, 1510 Hanna Bldg., Superior 7000

Dallas 1 ... James Cash, First National Bank Bldg., Prospect 7-4064

Los Angeles 17 ... Joe H. Allen, 1111 Wilshire Blvd., Michigan 3691

New York 36 ... Knox Armstrong, Robert S. Muller, Charles L. Todaro, 330 West 42 St., L'Onsgard 4-3000

Philadelphia 3 ... William B. Hannum, Jr., Architects Bldg., 17th & Sansom Sts., Rittenhouse 6-0870

San Francisco 4 ... Ralph E. Dorland, 68 Post St., Douglas 2-4600

Boston 16 ... 350 Park Square Building Hubbard 2-7160

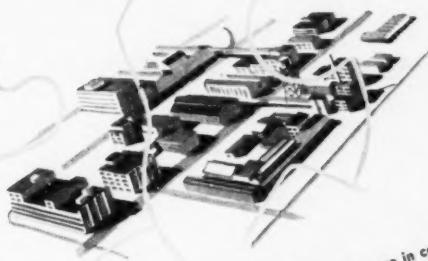
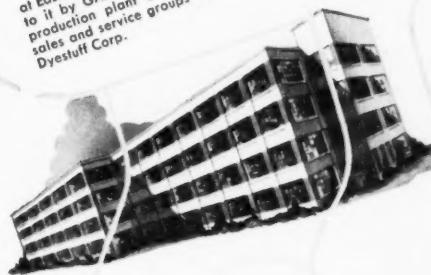
Detroit 26 ... 856 Penobscot Bldg., Woodward 2-1798

Pittsburgh 22 ... 738 Oliver Bldg., Atlantic 1-4707

St. Louis 8 ... 3615 Olive St., Continental Bldg., Lucas 4887

...TO Complete THE PICTURE

**General Aniline & Film Corporation's
Central Research Laboratory**
at Easton, Pa., regularly handles research problems brought
to it by GAF's Product Development Department, by the
production plant of General Aniline Works or by the
sales and service groups of Antara Products and General
Dyestuff Corp.



General Aniline Works
at Grosselli, N. J., and Rensselaer, N. Y., are in constant
communication with sales and service groups to insure
realistic production planning and to keep quality controls
up to rigid standards. Cost-cutting methods of production
are constantly investigated.



**Antara Chemicals, Division of
General Dyestuff Corporation**,
works closely with research, development and
production groups to bring to industry quality
products backed by the facilities and personnel
to service industry's problems.



ANTARA® CHEMICALS

MADE BY **GENERAL ANILINE & FILM CORPORATION**

SOLD BY **GENERAL DYESTUFF CORPORATION**

435 HUDSON STREET . . . NEW YORK 14, N.Y.

PENTEK®

The TOP QUALITY Pentaerythritol
Makes Better Paints and Varnishes!



Consider these features offered by Heyden Pentek in the manufacture of fine surface coatings:

- Proved performance based on years of leadership.
- Dependable uniformity through rigid laboratory control.
- Increased availability through Heyden's expanded production.
- Economy of time and materials in resin production.
- Superior durability and beauty of finished paint.

If you are making alkyd resins, rosin esters, tall oil esters or drying oils, PENTEK gives them the extra quality you are looking for.

When you formulate with PENTEK, your paints, varnishes, lacquers and enamels have tougher films, increased color and gloss retention, and added resistance to alkali, water and weathering.

Specify PENTEK with confidence! It's made to fill your needs by Heyden, pioneer producer of pentaerythritols. Technical facts, figures and samples available promptly upon request.

PENTEK is packed in easy-to-handle, strong multi-wall paper bags, 80 lbs. net.

HEYDEN CHEMICAL CORPORATION

342 Madison Avenue, New York 17, N.Y.

CHICAGO • PHILADELPHIA • SAN FRANCISCO • DETROIT • PROVIDENCE

SERVING INDUSTRY THROUGH FINER CHEMICALS

Benzaldehyde • Benzene • Benzyl Chloride • Bromides • Chlorinated Aromatics • Crocetins • Formaldehyde
Formic Acid • Glyceroephosphates • Guaiacol • Hexamethylentetramine • Medicinal Colloids
Methylene Disalicylic Acid • Neomycin • Parformaldehyde • Parahydroxybenzoates • Penicillins
Pentaerythritol • Propyl Gallate • Resorcinol • Salicylates • Salicylic Acid • Streptomycin

